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Single Gender Programming in a High School Setting: A program Evaluation Project.

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SINGLE GENDER PROGRAMMING IN A HIGH SCHOOL SETTING:

A PROGRAM EVALUATION PROJECT

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NLU Digital Commons Document Origination Statement

This document was created as *one* part of the three-part dissertation requirement of the National Louis University (NLU) Educational Leadership (EDL) Doctoral Program. The National Louis Educational Leadership EdD is a professional practice degree program (Shulman et al., 2006). For the dissertation requirement, doctoral candidates are required to plan, research, and implement three major projects, one each year, within their school or district with a focus on professional practice. The three projects are:

- Program Evaluation
- Change Leadership Plan
- Policy Advocacy Document

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

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

In the **Policy Advocacy Document** candidates develop and advocate for a policy at the local, state or national level using reflective practice and research as a means for supporting and promoting reforms in education. Policy advocacy dissertations use critical theory to address moral and ethical issues of policy formation and administrative decision making (i.e., what ought to be). The purpose is to develop reflective, humane and social critics, moral leaders, and competent professionals, guided by a critical practical rational model (Browder, 1995).

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ABSTRACT

This project discusses the effectiveness of single-gender classes in a secondary school setting. Stakeholders efficiently leverage all available time for highly engaged, innovative learning in a variety of interconnected contexts as a means for improving student-learning gains. This research project investigates deeper into how student academic achievement can be enhanced and by so doing, reduce disciplinary problems or see if there is a correlation.

The project analyzes student test scores data of those in single gender classes and those in mixed classes and compares the result. Attendance and disciplinary issues are investigated among students of single-gender classes and their counterparts in mixed classes. This research project finds that some of the students did better than the ones in mixed classes. However, there was no significant difference when it came to attendance or discipline.

PREFACE

This project discusses the effectiveness of single-gender classes in a secondary school setting. Having gone to a single-gender Catholic high school, I see a few benefits to all-girls or all-boys classes, although most research shows no compelling academic rationale for either approach, or shows mixed reviews. Personally, I feel that there is less distraction from the opposite sex in the classroom so the students will be more attentive in class. Most of the parents I spoke to were in favor or support my way of thinking as well. Furthermore, the students will feel more comfortable in class among peers of the same gender. As a teacher, I seek ways to make my students comfortable, increase their self esteem and to be academically successful. The introduction of the single-sex classes originated by having a group of students (males, primarily Black males) who were disruptive in class had major disciplinary issues and their grades were not good either. So the former principal and one of the math teachers experimented with having an all-boys math class with these students and added a few more students. The success of this group of students led to more single-gender classes in other disciplines as well as the all-girls math classes in the school. When the previous female teachers were no longer there or did not enjoy teaching that class, I became interested to give a try and I loved it. The achievement levels of my students increased which is good for stakeholders at the school.

Throughout my research in this project, I learned as a leader to come up with different ways to make the school a success, which included one of the most important things which is to have the well-being of the students. Anything that will increase students' achievement level and decrease disciplinary problems is some of the things I continue to seek as a leader. During my research, I also learned that not teacher shared similar views as me or as research that male and female learn differently and so by separated in different classes, they can maximize their potential

and do better. I could see how this program was not successful as teachers who did not believe in or enjoy this kind of setting were teaching the students. Hence, the results anticipated were not acquired in some cases.

One of the experiences I got when I was researching this project was that I would in future if I had the opportunity, to ask and recruit teachers who were interested and invested in teaching single-gender programs. Also I would ensure that the teachers receive professional development and use some of strategies and techniques for teaching single-gender courses (as I realized some teachers had no background training). Furthermore, the students in these classes should be given choices to be in the class instead of selecting them first and asking if they wanted to stay or not.

ACKNOWLEDGEMENTS

I would like to acknowledge all those who helped me obtain data I needed for this dissertation including surveys and interviews. I could not have written this paper without their help and support and I cannot thank them enough. I will also like to thank Dr. Stu Carrier, my former Chair, who started me off with my very first dissertation, this PEP but went to Illinois to take a position as Interim Dean. He still always looked over me and checked my progress. I will also like to thank my current Chair, Dr. Carol Burg, without her leadership and guidance I could not have made it. My thanks also go to Dr. Dan Buckman and Dr. Jim Scott who worked with me on my internship as well as being my professors throughout my doctoral degree. Thank you to all professors and visiting professors who taught me at National Louis University and to TA002 cohort members.

My sincere thanks also go to my principals who allowed me to conduct research and gave me the support I needed. I also want to express my special appreciation and thanks to my family, especially my brother, Dr. Emmanuel Ghansah who came to my "rescue" at the eleventh hour when I needed him most; there is no bond like brother and sister. I will also like to thank my colleagues and friends. Obtaining my doctorate degree is a big deal to me and so I appreciate everyone who contributed in any way throughout this journey.

DEDICATION

I would like to dedicate this Single Gender dissertation to my late mother, Mrs. Agnes E. Ghansah and also to myself. Both my mother and I attended a single-gender school (all-girls Catholic school) while growing up and so relate a lot to this dissertation even though this was conducted in just single-gender classes but not the entire school was single gender. My mother is one of the people I look up to as a hard working, dedicated, big and open heart, generous, and a loving caring parent. She was the glue to our family and affectionately known and called Mami by all who knew her. She was a mother to everyone – her children, grandchildren, great-grandchildren and in-laws. She sacrificed so much in her life in order for her family to get what they needed; what a selfless woman she was and I hope I could be half a mother as she was. It is unfortunate that she passed away suddenly a few months ago and she did not get to see me graduate. I could hear her saying to me, "Aggie wake up," and I would say, "five minutes." This wasn't actually 5 minutes but if not woken again, turned to be hours of sleep from tiredness. She knew of my struggles, yet determination to pursue this degree. I must say that her death gave me another will power to finish this off and made sure that I obtained the degree I always wanted. I know I will not be happy until I became Dr. Agnes Ghansah, or to be called Dr. G. for short!

Mami, wherever you are, this is for you and for us, from Agnes junior to Agnes senior. Mami, thank you, thank you and thank you for everything! I will never forget you and I miss you so much! To God be the Glory – that was one of my mother's Biblical sayings and one of her favorite scriptures is Psalm 121:1 "I will lift up my eyes; my help comes from the Lord who made Heaven and Earth."

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SECTION ONE: INTRODUCTION

In 2011, a large school district in the southern U.S. embraced single-gender education and established a pair of middle schools as separate boys' and girls' academies. In the fall of the same year, Hopkins High School (pseudonym) experimented and implemented single gender (SG) all-boys and all-girls classes in math, reading, and English. This new program was intended to help cut down on students' disciplinary problems and hence improve academic performance. Hopkins High School is noted for some students' disruptions and low tests scores and so by having these single gender classes may show some improvements. Initially, single-gender class was introduced in the school because the administration (typically the principal) was trying to find a way to reduce increase academic achievement and reduce disciplinary behaviors. This is first implemented and test in one of the math classes to form an all-boys to one of the remedial math courses with a group of students who lacked motivation, were disruptive in classes and their grades were not good either. Under the umbrella of a male teacher, who was successful in around these set of boys for the better, other single gender classes were formed in the math department with all girls, another course and then to other disciplines as well. I chose to evaluate the program because I wanted to know how effective the program was, especially since that was the only high school in the district with single-gender classes.

Purpose

The purpose of my study was to evaluate the single gender program at Hopkins High School (HHS) regarding particularly the effectiveness of the program and modifications that might be needed to improve the program. Since HHS was the only

high school in the district offering single-gender courses, a lot of people including myself was interested to know how the program doing and if it impacted students academic level of performance and any other contingencies. In addition, I wanted to know if there were other factors influencing the success or failure of this program. The purpose of this research is also to learn more on how boys and girls learn differently (how their brain works) and how better to serve them during teaching of these single gender classes. This will help to evaluate if it is effective having the classes separated by gender. According to research, most students in single gender classes or schools do well so I wanted to know if this is the case at this school.

Rationale

Having gone to a single-gender Catholic high school, I see a few benefits to all-girls or all-boys classes, although most research shows no compelling academic rationale for either approach, or shows mixed reviews. The practice of separating boys and girls in public schools is something that The American Civil Liberties Union (ACLU) has long fought to end. ACLU argues that that this is a practice that is outdated and gender stereotypical.. Critics argue that these programs promote harmful gender stereotypes. Ironically, single-gender programs seek to eradicate these stereotypes.

I took on the challenge for an all-girls math class last year and I liked it. However, I had a little rough start with a couple of the students who were removed eventually from that class. In addition, probably due to the class being the first period of the day, I had attendance issues with many of my students – tardiness and absenteeism. However, I must say that this year was a lot better, and I truly enjoyed my single-gender class and I saw positive results.

Nevertheless, there are many things to be done besides just offering these classes in the schools. I wanted to evaluate the effectiveness of the single gender (SG) classes at HHS. The principal at HHS was interested to know the results of my research findings so that if the program seemed to be successful, this would lead to other single gender classes, which will also determine how far and to what grade levels to extend this program. HHS was currently offering single gender classes in math, reading, English, and social studies classes.

I gathered data collected from various places in relation to my questions and topic. I also looked at a comparison group, which was a coed class of the same type of course content, and compared with the single gender type. Furthermore, I reviewed the literature for data from other schools that have single gender classes and investigated how effective they are.

This program evaluation was important to the district since HHS happened to be the only high school in the south offering single gender classes. The district needed to know how effective the program was, if any changes were needed, and if there was the need to offer SG programs in other schools. Of course it is also important to the community at large and stakeholders to know if students are benefiting from this program and what could be done if it was not.

Goals

The goals of my program evaluation were to determine the perceptions of teachers and administrators regarding how students were performing academically and behaviorally. I also wanted to explore the teachers' and administrators' perceptions regarding the single gender students' motivation, and see if there was any difference in

attendance. These goals were related to improve student learning because when students are interested in school and about their academics that result in increase in students' achievement level.

In addition, if these goals are attained, the single gender students will serve as role models for other students and in turn, improve student learning across the school through their anticipated influence on the school learning culture. HHS always strives to improve students' achievement and one of the ways the school the school tried to do was by implementing single-gender classes. Now there was a need to evaluate how effective the program is and what improvements needed to be made and there is where I come in. I did approach the principal to do this research evaluation since there has not been any of that sort done since the implementation of the program in 2011.

Exploratory Questions

As result of the need to increase student achievement and reduce student behavior problems, I studied the effectiveness of single-gender programs at HHS. My primary research questions include:

1. What aspects of the Single gender education program are working well at Hopkins High School (HHS), as indicated by the participating teachers and administrators, and student data?
2. What aspects of the Single gender education program are not working well at HHS, as indicated by the participating teachers and administrators, and student data?
3. What suggestions for improving the Single gender education program at HHS are indicated by the participating teachers and administrators, and student data?

My secondary research questions include:

1. How do the single-gender classes compare to the parallel mixed-gender classes as indicated by the students' achievement data, attendance data and behavior data?
2. What are the perceptions of the teachers and administrators regarding the single-gender program?
3. What student academic and behavioral gains have been observed in relation to the program, as indicated by the teachers, administrators, and student data?
4. What recommendations will this study generate for administrative and leadership steps at the school and district levels, as indicated by the teachers and administrators?

Conclusion

Both the principal of HHS and I were interested to see the effectiveness of the single gender program at the school. This will intend lead to the expansion of the single gender programs to other disciplines and grade levels at the school. By determining that the single-gender program being offered was successful, other single-gender classes will be created in other disciplines and grade levels. Single-gender teachers should attend professional development training whereby the teachers can use strategies learned to teach in all-girls or all-boys classroom, some of the strategies that may not work well in the co-ed classrooms. If this is carried on effectively, then great things will happen.

SECTION TWO: REVIEW OF LITERATURE

Introduction

Two years later after a large school district in the southern U. S. embraced single-gender education with a pair of middle school separate boys and girls academies, these schools experienced continued success. Both of these middle schools had improved letter grades by that state's grading period. The Girls Preparatory Academy of Light (GPAL) improved from a "C" to an "A" and the Boys Preparatory Academy of Hope (BPAH) improved from a "D" to a "B". From these developments, school administrators were excited and proud to be seeing such a progression in both schools, despite the criticism they had faced by those who disagreed about separating students based on gender. According to school district memorandum,

> The Amendment to Title 9 in 2006 has allowed the creation of single gender classes in public schools. Medical and educational researchers have also documented benefits attributed to separating students by gender in classrooms. However, there are educational and legal parameters that must be followed when implementing these programs (reference citation omitted to protect confidentiality).

As part of this communication memorandum submitted to all principals by the Assistant Superintendent for Administration and Director of Student Planning & Placement for that school district, this statement shows district awareness and support of single gender programs as of 2006 as well as the district leadership's caution about implementing such programs. The mention of "legal parameters" in the memorandum shows the district's concern with compliance with equal education practices in 2006; these concerns have

increased over time as single gender programming has attracted attention by both supporters and detractors. The memorandum continues with the following statement in support of single gender programs based on brain research:

> Furthermore, according to that district's Single Gender Programs and Educational Rational, although there is large variance within gender, there are biological differences in boys and girls that affect learning.

This aspect of developmental brain research supports single gender programs. According to researchers of brain-based sex differences, Michael Gurian and Kathy Stevens, there are several profound educational reasons why boys and girls should be separated in classrooms:

- Sequence of brain development
- Biological differences in vision and hearing
- Learning style differences
- Single sex classes and schools demonstrate benefit for the students in many areas – academics, attendance, discipline, and attitude
- Self-efficacy and self-esteem
- Effects on educational aspirations, locus of control and self-concept (Gurian & Stevens, 2007)

The inquiry that I undertook is informed by these brain-based sex differences in learning identified by researchers especially in the area of benefits to student engagement in the classroom and in school.

Single Gender Education and Student Achievement

The research on the potential of single gender education to garner higher student achievement levels has spurred controversy over the past decades. The identification of the beneficial elements of single gender classroom environments has been studied as well as overall educational achievement gains. The research provides a mixed review.

In one of the studies on single-sex in Great Britain, Sullivan (2008a, p.20) it was found that girls from single-sex schools felt more confident in math and science classes than at other coeducational schools. Similar findings from the United States, Sullivan reported that girls "from single-sex schools were more likely to major in gender unconventional subjects in college." Similar to Sullivan's findings, Sax (2011) found "lasting positive effect of single-sex schools on educational attainment" (page 18). So in essence, students enrolled in single-gender classes or who attended single-gender schools had a long effect on them whereby they took whatever (the good characters) they learned in those classes or school as a whole and carried on to other places and colleges where they were no longer in single-gender environment.

Amanda Morin (2016, p. 1) counters these findings and cautions educators: "As the number of public schools offering single sex classrooms increases, many parents of girls wonder how effective it is and if it makes a difference." Being a teacher of a single gender girls' class, I was interested in Morin's concerns. However, I found her first two stated advantages demonstrated by my observations of my students as well. The first advantage stated was "the freedom to explore all subjects without falling victim to the stereotype that math and science are hard" (Morin, 2016, p. 2). I observed that in my all-girls' class, it seems that because the girls were separated from their male classmates the

girls were less frequently dismiss their math abilities nor were they as likely to back away from participation fearing failure or fearing that boys will not like them for taking on what may be perceived as a traditionally male subject. The second advantage was "higher self-esteem," and third, "leadership training" (Morin, 2016, p. 2). I have observed that my students in the all-girls' class seem to demonstrate a high self-esteem and self-confidence in expressing themselves in class. They were not too shy or afraid to speak up in my class, whereas some would have been, in a coed class. This freedom to express themselves a little more confidently and to take leadership roles seems as a result of their single gender experiences, 63% of the women surveyed felt that they were well prepared for the real world and a good amount of the women surveyed, that is, 93% felt that they had more leadership opportunities. This was a report from survey conducted by the National Coalition of Girls' Schools in 2010).

Conversely, there are others who believe, according to some studies, that the distraction caused by boys in the co-educational classroom is a myth and that single-sex schools do not benefit girls. The idea that girls benefit from being in an all-girls place is not something that is supported by Alan Smithers and Pamela Robinson for the Center of Education and Employment Research at Buckingham University. (Smithers & Robinson, 2006). Their findings suggest that single-sex education does not necessarily lead to greater academic achievement; even though there are excellent single gender schools, they are not necessarily excellent because of the single gender nature of the school (2006). They found no evidence for the claim that girls are more likely to choose science and math subjects because of their enrollment in a single gender environment (2006). Most helpful to my study is Smithers and Robinson's (2006) identification of the most

important factors to successful educational culture, regardless of whether or not it is a single gender environment: children's abilities, the quality of teaching, the leadership. This insight kept me grounded as to the undergirding variables that crucially influence student achievement whether in the co-educational or single gender setting. This gave me a great deal of caution toward overvaluing one changed variable such as single gender programming. However, there continues to be strong research evidence supporting the effectiveness of adding the single gender program as an option for students. The research I read continued to demonstrate differences of perception concerning single gender educational programming.

The United Kingdom has been struggling to resolve some mixed research and practice in single gender education. Some educational experts in the UK argued against Sax's call for embracing single-gender schools in Britain, saying that the assumption that students learn better when separated by gender is false or invalid. One of the strong arguments from those who oppose single gender classrooms is that when students learn apart for so many years, students are losing important socialization growth opportunities by not mixing with the opposite sex and by not learning to interact positively with the other gender (Asthana, 2006a). Yet Sax (2006) has many practical reasons for single gender based instructional approaches. Separating the girls from the boys does not seem to be his primary goal. Rather, his emphasis is on the way teachers teach boys and the way teachers teach girls. The separation of the genders seems to be more for providing the teacher with an audience that learns in the same way. Lisa Zamosky's article on WebMD, summarizes this point succinctly:

> Sax says there are no differences between boys and girls in terms of what they can learn. "But there are," he says, "big differences in the way to teach them." (Zamosky, 2015, p. 1)

Sax's research and reflections in the book, Girls on the Edge (2006), have added tremendously to my perspective and to the focus of my study. Based on his emphasis on the instructional strategies, I realized early on that I would need to glean observational data on teacher instructional behaviors to assess whether or not single gender environments where merely the separation of boys and girls, or if they were indeed providing best practice single gender instruction. The expectation of increased achievement is based on the latter.

This leads me to another criticism of single gender education has centered on the ability of researchers to clearly identify that it is the single gender environment rather than other factors leading to academic gains. For example, Asthana summarizes that "Critics say it is other factors, rather than single-sex status, driving the success, such as social background and ability" (Asthana, 2006b, p. 2). However, some schools have chosen another third option whereby they have what is termed as a "diamond-shaped" school. This is a coed school with some single gender classes mixed into the programming. In this situation, teachers have to adapt to different styles as they move from an all-girls' class to an all boys' class and then implement effective instruction for their mixed gender classes. This is similar to what we have at my school, Hopkins High School, a co-educational public school with some single-gender classes provided in some disciplines. The subject content matter remains the same, while the teaching styles and approach may differ to better serve the boys or the girls learning preferences. Again,

without a change of instructional strategies to meet the needs of boys or of girls, the single gender program has no promise of success.

If it is only about instructional strategies, why create single gender schools and classrooms? Two experts offer differing points of view on single education during an interview on the National Broadcasting Company (NBC) nightly news broadcast (2013). Dr. Leonard Sax, of National Association for Single Sex in Public Education (NASSPE), of course, comments and recommends girls and boys to be educated separately as they learn differently whereas, Dr. David Sadker, Professor at American University, opposes for students to be in single gender classes or schools. He said we should take the ideas found about how students learn and behave, into coed classes and schools. He said that by separating boys and girls classes/schools causes sexism and the solution is to address sexism in coed schools, the things that bind us together not separate us (NBC, 2013).

The book, *Strategies for Teaching Boys and Girls* (Gurian, Stevens, & King, 2008) was included at my school as a book study. The authors provided me with insights and strategies for teaching my all girls class as well as my coed classes. One of the chapters in this book provides an overview of the latest research information available on how boys and girls learn differently and how those differences can and should change the way we implement our curriculum. The insights into the structural differences in the anatomy of the brain and brain functions for boys and girls as mentioned previously has formed a touchstone for my inquiry and practice. Gurian Institute was established on basic brain differences principles. For example, boys have less serotonin and oxytocin hormones than girls have; these hormones promote a sense of calm (Gurian, Stevens, & King, 2008).

Patterson's timely 2012 article, discusses the positive single gender programming results gained at Claremont Academy in Chicago. This school is located at one of the toughest neighborhood in Englewood. In 2007, there was a shift to separate 7th- and 8th grade boys and girls for their academic subjects After several years, the evidence came that math and reading composite scores were 76% higher for 8th graders at Claremont and 82% higher for 7th graders in math, reading, and science. These students met or exceeded the state standards.) (Patterson, 2012). What is most important in this study to my research is Patterson's perspective on the current battle with the American Civil Liberties Union against single gender education. He sees many schools such as Claremont as desperate to engage with innovations in order to find ways to close achievement gaps. Single gender is one of these innovations, but separating the sexes is not the main point. However, the teachers at Claremont did not believe the high test scores was due to the separation of the genders, to a focus on the instructional needs of students. At Claremont the program is developed to maximize student support and teacher team work:

> Students have the same four teachers for their academic subjects in 7th and 8th grades, so teachers get to know them over two crucially important academic years. The teachers are a closely knit group who have worked together for six years and frequently discuss students. (Patterson, 2012, p. 38).

Patterson's research emphasized the need for substantive change in educational programming along with single gender instructional practices with an important focus on teacher practices.

Another study conducted in 2005, by the United States Department of Education (DOE) Office of Planning, Evaluation and Policy Development, made a systematic review of Single-Sex versus Coeducational Schooling at the elementary and secondary levels. Again, the findings seemed mixed. The report states that "there is some support for the premise that single-sex schooling can be helpful, especially for certain outcomes related to academic achievement and more positive academic aspirations" (2005, p. 85). (Washington DC DOE, 2005). Since I was researching on how or if the single gender program was effective at Hopkins High School, I wanted to see what research out the shows in terms of students in single gender environment.

One research conducted by Alexa Guglielmi provided an interesting reality check for me as far as eliciting single gender educational benefits through careful research. Guglielmi's study focuses on self-esteem. The report, describes her process. She conducted a 25-question survey from grades 9-12 student residents of Connecticut. From a single-gender catholic preparatory school, she obtained surveys from 60 out of 437 female students and 750 females from a co-ed public high school. Also, beside the surveys, she met with three 15-year old female sophomores students from the co-ed high school. A statistical analysis was performed to check the hypothesis about the girls' self esteem and relationship with rest of the school. Her quantitative findings show,

> No significant difference between girls at single-sex and coed schools in terms of self-esteem. There was also no significant difference in feelings about their appearance for students at the single sex compared o the coed schools. There was also no difference in feelings about their peer relations and academics. (Guglielmi, 2011)

Her findings were a little surprising to me; I thought there would be at least a significant difference in the self-esteem of students in the single-sex schools. Ultimately, (from qualitative standpoint and in general), Guglielmi found that from both single-gender and mixed or co-ed schools, the girls' self-esteem was high "competition remained the main focal point to the girls' self-esteem, which she believed could have negative impacts when building identity of a person." (Guglielmi, 2011, p. 10). Most of the time, we hear about students' self-esteem or morale being low about this source shows that girls do have an edge over the boys in this "department."

Guglielmi's study reinforces my understanding of the mix of variables influencing student outcomes whether through single gender program implementation effects or co-educational program effects. There is a continuing need to access the direct influences on student outcomes cautiously and with a continued sensitivity to students' ability and prior levels of performance as well as other variables in play in the educational environment.

Definition of Terms

"Single-sex" and "single-gender" are used interchangeably in this paper and refer to the same thing. They both refer to education of students separated by all boys or all girls in a class or school. Although single-sex education is common in other countries because of religious or cultural beliefs, since the early twentieth century has not been the case in the case in the United States especially in public schools. However, this continues to be a common practice in many private schools across the country.

According to Webster's dictionary, self esteem can be defined as a feeling of respect someone has of himself as well as being able to do so. This gives a person a sense of worth and ability which is a key part to one's identity (2015).

Conclusion

In Conclusion, the research on single gender education is to enhance student achievement. In addition, an increase in school grades is just one indicator of the success these single-gender schools accomplishments. Other signs of their achievement include a decrease in discipline reports, improved attendance rates, and a reduced achievement gap between minority and white students. The authors, Gurian, Stevens, & King, challenge us teachers to think more deeply about our current teaching practice – what we do, how we do, why we do - so that we can be more intentional and informed in our instructional decision making, (Gurian, Stevens, & King, 2008, p. 158).

SECTION THREE: METHODOLOGY

Research Design Overview

To gain insight into the practice of single gender programming and to conduct an evaluation of the HHS single gender program, I used key research best practices processes and procedures to solicit participants, ensure ethical practices, conduct surveys, schedule and conduct interviews, as well as to compile and analyze data. I feel like my research design/methodology helped me to answer my research questions. Without the results of the students' data and conducting surveys and interviews, I would not have gotten a better understanding of my research and how HHS is doing in terms of the single gender program.

Participants

All participants worked with the single gender classes at Hopkins High School. These were up to nine teachers of current or past single-gender classes of HHS; participants were both adult female and male teachers, ages 22 to 60. There were also up to four adult administrators of single-gender class students of HHS, ages 22 to 60. The teachers took a survey whereas the Geometry teachers, in addition to the survey, also participated in an interview. I chose these participants because HHS was the only high school in the district offering single gender courses and these were the teachers and administrators involved with the students. In addition, these were the people with direct student contact and involvement with the program, so I expected to get the appropriate results and feedback.

Data Gathering Techniques

The types of data gathered were teacher and administrator interviews, teacher and administrators surveys, student test scores, and student attendance/disciplinary records. I chose to collect these data because they would help me obtain the results for my study. I notified the principal of HHS in writing about my dissertation and asked to obtain permission to conduct surveys and interview at the school. Permission was granted in writing by the principal so I then went ahead with my data collection.

Surveys

My study included the use of two kinds of surveys – one for teachers (see Appendix A), and the other for administrators (see Appendix B). I notified teachers and administrators of current or past single gender classes in writing about my dissertation on single gender effectiveness which involved surveys and interviews. I structured the questions on the surveys so that I will get answers to my research questions or at least the research questions would be addressed. As per the directions from the district, the administrators were not given the surveys till after the end of the school year (again by the directions of my district approval letter).

I was approved to conduct my research in May. Since school was going to be out in June at that time, I was asked to wait till after the end of the school year to do so. Administrators are usually busy with end-of-school year stuff. Each teacher and administrator was given a consent form for the participation of the surveys. Upon receipts of the consent forms, I gave out surveys to them.

Interviews

Each of the two geometry teachers (only geometry teachers could be interviewed) was given a consent form for their voluntarily participation of the interviews. Upon receipts of the consent forms, I contacted them for appropriate date, time and place to schedule the interviews. Once again, just like the survey, I carefully designed the interview questions so that the research questions will be addressed. I intended to get answers or insight as to how the single gender program was working or being effective as indicated by the participating teachers and administrators, and student data.

Student Data

The student data I gathered was based upon what I was approved to collect and available. I also purposely chose some of these student data to help address my research questions. I wanted students; tests scores of all-girls, all-boys and the co-ed whole school group in each category of the data I collected. This helped me to make inferences about the different category of the results. I also purposefully chose to collect student data on attendance and disciple (behavior) records as well. The student data I collected was designed to help me to know how the single-gender classes compared to the parallel mixed-gender classes as indicated by the students' achievement data, attendance data and behavior data. This was one of my secondary research questions.

Data Analysis Techniques

Surveys

For my quantitative data, I created a table to explain and analyze the results for the scaled response survey questions. I analyzed each survey question, tallied and computed the descriptive data for each question. For the open-ended surveys I analyzed

each survey question, tallied and computed the descriptive data for each question. For the open-ended surveys and interview, I looked for similarities and differences of the answers to various questions.

Interviews

For the interview data, I analyzed the data for emergent themes among and between participants, and noted similarities, differences, as well as unique but relevant or important themes. I also looked for similarities and differences of the answers to various questions. Since there were only two interviews, I mentioned some of the responses that caught my attention.

Student data

For my quantitative data, I created statistical data pie charts and tables to explain and analyze the results of the student data. For each student data collected, (district tests scores, students' attendance and discipline data), there were comparisons to see any differences among how the all-girls and all-boys Geometry students did compared to the whole school group. Based upon the results or the information gathered, then I commented or concluded if the being in the single-gender classes had any effect upon various aspects of the data, such as attendance, discipline, test scores, etc.

Ethical Considerations

I tried to ensure not to breech any code of conduct during my research and data collection with ethical consideration given to my participants, according to the guidelines of the Code of Ethics of that school district, the state's department of education, as well as the National Louis University (NLU) Institute of Research Review Board's (IRRB) Criteria for Ethical Research. I obtained permission from NLU and the school district to

conduct my research my first submitting my paperwork (included my research proposal application and other materials) to the NLU IRRB. After it was approved, I then forwarded a request to conduct my research at that school district (including the NLU approval letter, my research proposal, consent letters, copies of interviews and surveys, etc.) to the district. I waited until I obtained my approval letter to conduct this research. I used a checklist to help me in my evaluation of the informed consent documents accompanying each protocol to assure that those required elements were included as I conducted my surveys and interviews. I first contacted the principal of the school to get permission to conduct research (see Appendix G – School Site Administrator). I provided each participant with two copies of the informed consent form – one to sign and one to keep. I explained the document and answered any questions that may have, before I asked for their participation.

No minors were used for the surveys or interviews so the participant signed their own letters of consent. The individual consent for to participate in survey (Appendix E) and the individual Consent for Interview was (Appendix F). There was no risk to participants beyond that of everyday life. However, to ensure the anonymity of the adult participants and student data, I did not use their real names and kept the data confidential by keeping it in a locked cabinet in my home, to which only I had access. The potential benefit of this research was that this study revealed the strengths and areas for improvement in how the single gender program was run at HHS.

Conclusion

I explored the single gender programs at HHS with the collaboration of the teachers and administrators of HHS. This will not have been possible without the school district that granted me permission to move forward with my research and also the district office for providing me with the data I needed to collect data and analyze my results. This research experiences enlightened me and I enjoyed every aspect of it. I wish I could go back for a follow up.

SECTION FOUR: FINDINGS & INTERPRETATION

Findings

As mentioned in my previous chapter, I had initially wanted to survey and interview all current and past single-gender (SG) teachers as well as administrators at HHS, but I was approved to only to use Geometry teachers for data and interviews, and only survey other single-gender teachers. Therefore, only the two Geometry teachers for 2011-12 and 2012-13 school years were asked if they would volunteer for an interview (by the district approval letter, only the Geometry teachers could be interviewed –no administrators). Initially the district was concerned about the length of my 2-page 15-interview questions (see Appendix C) and thought the interview might go over the thirty minutes I had proposed, so they contemplated upon whether an interview should be conducted. Actually both interviews did not last more than twenty (20) minutes. The results of the interview are discussed in this section later below. In addition, surveys of the administrators were not to occur until after the end of the school year; therefore, administrator survey results were later included in this paper from just one person.

Teacher Survey

I received eight (8) teacher surveys back from the twelve (12) that I sent out, for a response rate of 67%. In response to survey question #1 which stated, "Overall, teaching single gender class(es) has been a positive experience for me," fifty percent (50%) of the respondents answered strongly agree, 25% responded "agree", and 25% answered "disagree". The expression of the positive nature of the teachers' experience with single gender program at 75% is very promising, especially in terms of potentially generating an understanding of what these teachers found to be positive about their experiences.

To the second question on the teacher survey which stated, “Generally, my single gender class average is higher than my coed class of the same course,” half of them responded agree, 25% strongly agree, and another quarter of them disagreeing. This is interesting to explore further in that 75% of the teachers perceive single gender program students out performing co-educational classes taught by the same teacher.

The response of the geometry teachers to the third question, “Compared to students in my coed classes, my single gender students are more interested and motivated in my class,” this time the responses were different and scattered. Half of them (50%) disagreed, 37.5% agreed and 12.5% (one person) had no opinion on this matter. The response to “interested and motivated” seems not to identify any differences in single gender and coed class student engagement.

In response to the fourth question, “Generally, compared to students in my coed classes, my single gender students complete assignments more efficiently,” 50% answered agreed, 25% strongly agreed (totaling 75% in agreement), whereas two teachers (25%) responded in strong disagreement. Some of the teachers had difference of opinions as to whether the students in their single gender classes completed their students as compared to their co-ed classes. I guess they felt it was not due to being that environment that caused students to complete or not to complete assignments..

For the fifth question which stated, “Compared to students in my coed classes, my single gender students have less disciplinary problems in my class,” 37.5% of the respondents (3 people) were in agreement, 12.5% (one person) strongly agreed, whereas 37.5% disagreed and 12.5% (one person) had no opinion in this matter. This seems to demonstrate no difference perceived between the two class types.

According to the sixth question, "Compared to my other coed classes, my single gender students are more comfortable to express themselves in class and have more self-confidence as well," everyone was in agreement, with the breakdown as 62.5% (5 people) agreed and 37.5% (3 people) strongly agreed with this statement. This shows a favorable strong positive response for effecting student behavior, and seems to demonstrate one of the strengths of the single gender program at the school.

The next question #7 read as "I have attended and/or received sufficient training dealing with single-gender strategies and research studies." In response, 75% agreed with a breakdown of 37.5% strongly agreed and 37.5% agreed, but two people (25%) had no opinion on this matter. This shows a positive teacher perception of the amount of training they have been provided.

With the last multiple choice question/statement, "I have used at least two single gender strategies in my classroom this school year," 87.5% were in agreement with a breakdown of half of them said "agreed" and 37.5% answered "strongly agree", but one person (12.5%) disagreed. The use of single-gender strategies is being enforced and recommended by all teachers to use. There are workshops and trainings being offered throughout the year and the summer on this concept. This is an important as an indicator of the implementation of teaching strategies for single gender.

Table 1 below is a visual presentation of the results with the survey and tally responses presented for each survey item.

Table 1. Teacher Survey Responses by percentage and by responses; "*" represents the number who selected this response; n=8.

	Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4	No Opinion
1. Overall, teaching single gender class(es) has been a positive experience for me.	-	**25%** 2*	**25%** 2	**50%** 4	-
2. Generally, my single gender class average is higher than my coed class of the same course.	-	**25%** 2	**50%** 4	**25%** 2	-
3. Compared to students in my coed classes, my single gender students are more interested and motivated in my class.	-	**50%** 4	**37.5%** 3	-	**12.5%** 1
4. Generally, compared to students in my coed classes, my single gender students complete assignments more efficiently.	**12.5%** 1	**12.5%** 1	**50%** 4	**25%** 2	-
5. Compared to students in my coed classes, my single gender students have less disciplinary problems in my class.	-	**37.5%** 3	**37.5%** 3	**12.5%** 1	**12.5%** 1
6. Compared to my other coed classes, my single gender students are more comfortable to express themselves in class and have self-confidence as well.	-	-	**62.5%** 5	**37.5%** 3	-
7. I have attended and/or received sufficient training dealing with single-gender strategies and research studies.	-	-	**37.5%** 3	**37.5%** 3	**25%** 2
8. I have used at least two single gender strategies in my classroom this school year.	-	**12.5%** 1	**50%** 4	**37.5%** 3	-

There were two open-ended questions. The first one which is also question #9 on the survey asked, “What word or phrase would you use to describe your single gender teaching experience?” Five out of eight respondents, that is, 62.5% answered in the affirmative that their experience was excellent and rewarding whereas the rest, 37.5% responded that their experience was very challenging.

The final question on the survey was, "What is the greatest accomplishment and success or benefit for having to teach single gender class(es)? This question did not have one answer but there were a few themes among all of the respondents, such as: a sense of teamwork, community support in the classroom, and relationship or bond between teacher and student (especially, female teachers and female students). In addition, there were responses as to students feeling comfortable to express themselves in class, plus lack of distraction in class from the opposite sex/gender classmates. The teachers felt that the students in the single-gender classes focused better because their other sex or gender counterparts were not in class to distract them.

Administrator Survey

Only one administrator, an Assistant Principal (AP), returned a completed survey later in the summer after school was out, as I was instructed to do by the district. The Administrative Survey Questions and Teacher Survey Questions were pretty much the same. The only differences were statements that for administrators, asking about the single-gender classes in general or pertaining to the school as a whole. The teachers' surveys asked them specifically about their classes that they teach. The administrator responded to all of the survey questions as "agree" and "strongly agree."

For the first survey question, "Overall, I have seen positive experience(s) in having single gender classes at this school," the AP answered in total agreement. He sees the benefits of the program and in total favor of it.

The Question #2 read, "Generally, the single gender classes at this school have higher-class averages than the coed classes of the same course," he agreed to this

statement. This means he checks the students' tests score and grade repot at the end of the semester or periodically throughout the year.

Question #3 was, "Compared to students in other coed classes, the single gender students are more interested and motivated in class," he also agreed to this meaning that he sees how student motivated in these classes compared to the mixed ones and he likes how the SB classes affect students.. For question #4, "Generally, compared to students in other coed classes, the single gender students complete assignments more efficiently," and he answered in agreement. For Question #5, "Compared to students in coed classes, the single gender students have less disciplinary problems in their classes," he answered in total agreement. This means that he see the advantages of having SG classes at the school whereby the students are not getting in to too much trouble. He works in students affairs so he handles referrals and other disciplinary problems that come to his office or his attention.

For question # 6, "Generally, compared to other coed classes, the single gender students are more comfortable to express themselves in class., and his answer was in total agreement. This is something that the teachers also agreed upon so should one of the benefits of students being in single-gender classes. Question # 7 read as, "I have attended and/or received sufficient training dealing with single-gender strategies and research studies," and he answered as strongly agree. Question #8, "My single-gender teachers have attended and/or received sufficient training dealing with single-gender strategies and research studies," he answered in agreement. However, from the surveys and interviews I conducted, this answer should not be in agreement as he is answering on behalf of the all SG teachers.

As far as the free response questions, the first one was read as, "How would you describe single gender experience at this school?" The response given was that the administrator has seen the school before SG programs, and that from data collected, the SG program has transformed many students' behaviors, attitudes and mindset toward school, classes and future life. This is to mean that the single-gender programs had showed positive impact on students' behavior, attitudes and hence their whole life in general. The last question, "What is the greatest accomplishment and success or benefit to having a single gender classes at this school?" His response was about finding out how the low level students making gains and growth in SG classes and their coed classes. Also, there were good relationships built between teachers and students. Furthermore, taking at-risk students to graduating students is the great accomplishment for the school and the students' family. The AP was also in charge of the SG programs so his input was very important. I could see that he was very passionate about the SG programs at this school and the positive impact the program has on students.

Teacher Interview

I could only interview Geometry teachers, so I interviewed two teachers regarding their experiences and perceptions of SG classes at HHS. I used Teacher1 and Teacher 2 to refer to the Geometry teachers I interviewed and their responses shared. Below are some of the responses to each question:

The first interview question was, "How many years of teaching experience do you have?" Teacher1 answered 6 years and Teacher 2 answered 2 years. Then I asked my second question, "How many years have you taught at this school?" Teacher1 has taught at HHS for 3 years and Teacher 2 for 2years. Question3 was "How many years

have you taught single gender classes?" Teacher1 answered that he had taught SG classes for one year whereas Teacher 2 has taught for two years. When asked if all of the SG classes taught have been at HHS, they answered "yes." Since that was the case, the next part of that question was not applicable to either one. The other part would have been to ask where they have taught before.

When asked question #4, "Which single gender class have you taught in the past and/or currently teaching? That is, what subject, course, grade level, and all boys or girls do you have your single gender class(es)?" Teacher1 said he taught Geometry, grade 9 through 12, all-boys, and Teacher 2 said Geometry, grade 9 and 10, all-boys. This means that both teachers have similar experiences a far the type of students and classes they have SG classes.

Then I asked, "If you are not currently teaching a single gender class this year, may I ask why?" Teacher1 said that he was not teaching a SG class that year because his schedule would not accommodate it, but Teacher 2 was teaching a SG class that year. Both teachers have taught and only had experience with Geometry all boys classes only. Since both teachers could not teach single-gender classes the same year because what the master schedule allows, one teacher taught at a time. I did not compare the results of the student data of different teachers but listened during the interview what each teacher had to say and they seem to have different opinions most of the time.

Question 5 asked "Which single gender (all girls or all boys) class do you prefer and why?" Teacher 1said that he had taught only boys so he was not sure, but he probably had no preference and Teacher 2 said the same—that he had also only taught boys so he was not sure. It can be deduced from the two teachers' responses that since

they have only taught all-male classes only, they could not really comment upon which gender classes they would prefer to teach.

My next question #6 was "What period of the day do you teach your single gender classes?" Teacher 1 said afternoon after lunch whereas Teacher 2 said last year, he taught 6th period after lunch, but this year was in the morning during 4th period. Then I asked a subsequent question as, "Do you find any difference with the students' academic performance and behavior due to the difference in period of the day that you teach them? Teacher 1 said that there is difference in academic and behavior while teaching *any* math class in the AM versus the PM. Teacher 2 said that last year with his period 6 after lunch, the students were hyperactive and with this year, having 4th period before lunch, students were hungry and tended to eat in class and get off topic. Well each teacher had a difference of opinion whereby one of them did not think the time of day they had the single-gender classes made a difference, the other felt that because his class was just before lunch time, his students were hungry and inattentive. I must say that from my own experience, students are hungry all the time regardless of the period. Also if his class was after lunch period, some of students could be sleepy and he would have another type of complaint.

Question 7 was *"*Compared to your coed classes of the same course, how are your single gender students' self-confidence and comfort level in expressing themselves in your classes?" Teacher1 answered "Greater -- boys much more comfortable and confident with each other and expressing themselves," but Teacher 2 did not make a comment on that. It seems that being in SG classes, the students felt at ease and comfortable in class.

Then my next question #8 was, *"*Compared to students in your coed classes, what can you say about disciplinary problems and attendance of your single gender students?" Teacher 1 indicated that attendance did not make a difference, that is, the percent amount of students absent in his SG class was about the same as the mixed class but there was reduction in disciplinary actions. Teacher 2 answered that attendance was poor, and in terms of disciplinary problems, students were not disrespectful towards the teacher but disrespectful towards each other. Comparatively, there is no significant difference in attendance as far as SG classes but the discipline was better in one teacher's SG class, whereas in another SG class, there seemed to be disrespect among one another. This is also what I found from data I collected on attendance and behavior that students being in single-gender classes did not have any effect on attendance; they were still absent to class or school.

Question 9 was "Compared to students in your coed classes, what have you observed about the interest and motivation in class with your single gender students?" Teacher 1 said his all-boys SG class students were more motivated to work as a whole, whereas Teacher 2 said that motivation and level of interest were lower in his SG classes. Once again difference of opinions between the two teachers. He second teacher sounded very negative as I was interviewing him and was not in agreement or have that many nice things or experience to say.

Then my next question10 was "In general, how does your single gender academic class average compare to your coed class of the same course?" Teacher 1 answered that the SG class average was higher than his other coed classes, but Teacher 2 said the average was lower than his other coed classes. Well, there was a split in the responses of

these teachers. Whereas one of saw higher academic performance in their single-gender classes, it was the opposite for the other teacher. Hence, the program was not "working" in all classes.

Then I moved on to question number 11: "What can you tell me about the work ethics of your single gender students in terms of being on task, completing class and homework assignments efficiently, etc.?" Teacher 1 said agreed with everything in the statement above regarding his all-boys single gender classes compared to his co-ed classes. Teacher 2 said that his students rarely completed homework in the SG class. He also indicated that with SG class, students were on task but were easily put off task due to distraction from other students. Although students in one SG class seem to be keeping up their assignments, it was not that the case with the other teacher; so once again, mixed reactions. It is not a surprise to have difference of opinions or mixed views. Clearly, just by a student being in single-gender class is not the solution to everything.

Question 12 asked, "Overall, how do you find your teaching experience with single gender class(es) so far?" Teacher1 said his teaching experience had improved, because the boys performed higher in class and he attributes this to students being in single-gender class. There were mixed feelings about the teaching experience of single gender classes as one of them has had success, but the other has not been successful. Teacher 2 said that the teaching experience with SB classes for him was not satisfactory at all due to low performance in grades and lack of accountability on the students. The single-gender program was not successful to each math teacher's class at that time. The experiences they both had been not the same and were attributed to the poor performance and lack of students' accountability.

12a) "what word or phrase would you use to describe your single gender teaching experience? Teacher I used the word "improved," because the boys performed higher in class and attributes this to students being in single-gender class. Whereas Teacher 2 answered, "not satisfied," due to low performance in grades and lack of accountability on the students. The second teacher did not have god experience teaching single-gender classes and his students' test scores were not good.

In question 12b I asked "What is the greatest accomplishment and success or benefit for having to teach single gender class (es)?" Teacher1 said he thought it was the lack of distraction from the opposite gender, whereas Teacher 2 said he had seen students eventually mature and grow up to the mentality of the school but not until the end of the school year. In other words, it takes students in his class a long time to see these students "grow."

When asked question 13, "Would you teach single gender class again next year if it was offered and why? If so do have a preference as to all boys or all girls, what course, grade level, and why?" Teacher1 answered "Yes, absolutely, because of less distraction." He indicated no preference on gender but preferred the geometry regular class and any grade level." Teacher 2 also said yes, but that he would like to go for all girls this time because the majority of the girls in the teacher's co-ed class accomplish more. He is also interested in teaching geometry. Both teachers wanted to teach single gender classes again due to less distraction, however, since majority of students who generally do well in class are girls, one of them preferred to change to all girls instead of boys next time. I may be biased here myself as I like teaching geometry and I agree to the statement one of

them made that generally the girls are ones who generally do well in class. This is from my personal experience as well.

My next question #14 was, "To your knowledge, have you attended and or received sufficient training dealing with single-gender strategies and research studies?

a. Did you attend training during this academic school year or during the summer?
b. If so, which ones have you attended or plan on attending and felt they were or would be beneficial?"

Both teachers have not attended or taken enough SG training or courses and none during the summer. However, one of them, Teacher 1 had taken a workshop on how to teach African American Males offered by the district which he found to be beneficial because most of the students in the SG class are African Americans.

My 15th and final interview question was, "Can you tell me some of the single gender strategies you have learned and used in your classes this year? Did that make a difference in the teaching and learning?" Teacher 1 said that he applied more kinesthetic teaching strategies, as males are more competitive and wanted to show they were capable of doing the work. Teacher 2 could not remember the name of the training or strategy but it was one of the basic training dealing with gender activities. He also tried other methods but was not successful, especially, the ones the students had to get up and move around the room, but the games worked more.

Teacher 2's final comment was to have a well balanced mixture of students in class. This means that by having all lower level students and with no prior math knowledge or background cause students to be off task and have behavior problems. This is true in the

sense the first time single-gender program was introduced was to find ways to get students who were very disruptive in class and have very low scores to do well. Usually, it seems students in these single gender classes were low-level achievers.

Student Data

Initially I had thought of asking my school's Assistant Principal for Curriculum (APC) and Department Heads for student academic records and access to the relevant student records from our Instructional Planning Tool (IPT) online, the attendance and disciplinary records from our Student Affairs Office (SAO), and the appropriate district data source. However, I was not allowed to do that so I obtained all of my data – student academic records, namely End of Course (EOC) and Semester exams scores, as well as attendance and disciplinary records – from the district office. Also, my initial plan was to collect data from English, Reading and Math classes, but I was approved to only collect data from Math classes, and for the school years 2011-12 and 2012-13 only. In the 2012-13 academic year, I collected Geometry data from 28 9^{th} through 12^{th} grade students (data segregated by females) and 21 9^{th} through 12^{th} grade students (data segregated by males). In the 2011-12 academic year, I collected Geometry data from 17 9^{th} through 12^{th} grade students (data segregated by females) and 20 9^{th} through 12^{th} grade students (data segregated by males).

Student Test Scores

Geometry Formative Assessment Semester 1 for 2012-13 school year

I collected student test performance data for Geometry Formative Assessments, Geometry End of Course (EOC) Exams, student attendance and discipline data for 2012-

13 and 2011-12 school years. Figure 1 shows the test performance of students at HHS who took the Geometry Formative Assessment Semester 1 on 2012-13 school year. This figure shows table of values and pie charts representations of the result of the Formative Assessment taken by students in all-girls geometry class, all-boys geometry class and the whole school of students who took the geometry test. The test score scores are categorized by three levels of performances: high performance level, medium performance (average) and low performance (below average). These do not compute to a letter grade or numeric grade but categorized in a way to show how many people performed above average passing (high), that is like achievement level 4 and 5, on level or average (medium), that is achievement level 3, and below the level of performance (low), that is level 1 and 2. Out of 176 students who took the test in the whole school, only three students scored high on the test, i.e. 1.7%. In terms of the all-girls class, out of seventeen students, one person, i.e., 5.9%, scored high and the same number for the all-boys class, one person out of 21 students scored high, which is 4.8%. For the school, it was almost split in half for students performing medium and low on the test. The all-girls class did better with 82% passing at a medium level but with the all–boys, only thirty-eight percent scored medium. Only two students in the all-girls class, which is, 11.8% scored low on the test, whereas in the all-boys class, 57.1% (more than half of the class) scored low on the test, as compared to the whole school which was 49% low and 49% medium. The data shows that the all-girls Geometry class was doing much better than the all-boys or whole group Geometry class and compared to the whole school.

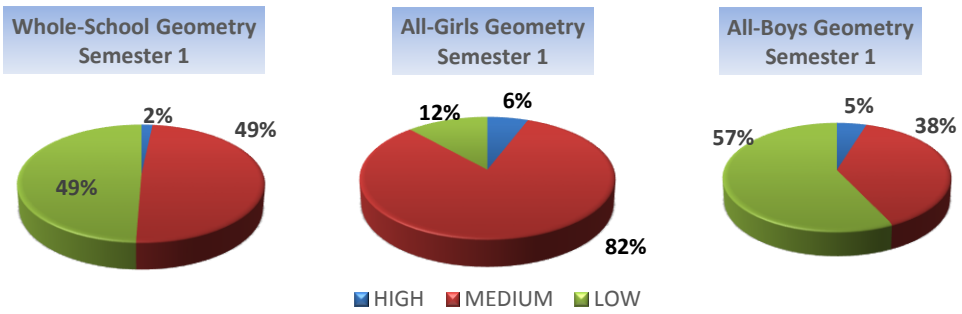

Figure 1. Test performance – Hopkins High School (HHS), 2012-13 School Year Geometry Formative Semester 1; n=176 for whole-school; n=17 for all-girls; n=21 for all-boys.

Geometry Formative Assessment Semester 2 in 2012-13 school year

Figure 2 below shows the test performance of students at HHS who took the Geometry Formative Assessment Semester 2 in 2012-13 school year. This figure shows pie chart representations of the results of the Formative Assessment taken by students in all-girls geometry class, all-boys geometry class and the whole school of students who took the geometry test. The results were the same or very similar to the previous data discussed above. In terms of the all-boys class, out of twenty students, one person, i.e., 5%, scored high; 40% scored medium; and a little over half of the class, 11 out of 20 or which is 55%, scored low on the test. It is interesting to note the even split between low and medium level performance for the entire population, that is whole school (49% for both), and the disparity between the boys and the girls when compared: the boys achieve much lower (at the low and medium levels), but the disparity between boys and girls at the high level is at one person, closely aligned.

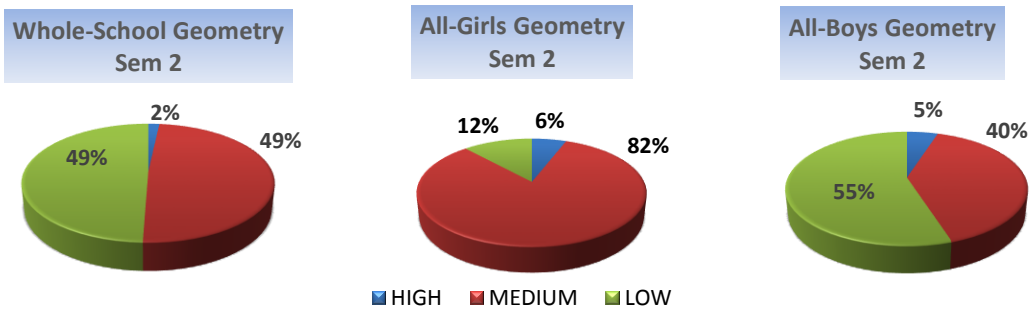

Figure 2. Test performance – Hopkins High School (HHS), 2012-13 School Year Geometry Formative Semester 2; n=176 for whole-school; n=17 for all-girls; n=20 for all-boys.

Geometry Formative Assessment Semester I in 2011-12 school year

Figure 3 shows the test performance of students at HHS who took the Geometry Formative Assessment Semester I in 2011-12 school year. This figure shows pie chart representations of the result of the Formative Assessment taken by students in all-girls geometry class, all-boys geometry class and the whole school of students who took the geometry test. The figure and test results show that the all-girls out-performed the all-boys and the rest of the whole group Geometry; it seems the program was working better for the girls. The whole school result 53% low was similar to the all-boys' results 54% low, and 43% medium and all-boy's 46%, but the difference is that no one scored high in the all-boys class. The all-girls Geometry class at 10% high and 60% medium with only 30% low did better than the all-boys or the whole school. Only 10% of the all-girls class, (which was one person) scored high, but the remarkable 60% medium score for all-girls far exceeds the 43% for the whole school or 46% for all-boys. Only 30% of the all-girls scored low which is good compared to the whole school of 52.9% and all-boys of 53.8%. Once again, the Geometry all-girls class seems to be doing better than their counterparts.

The all-girls were doing about 20% much better than the all-boys and whole school on the Formative Assessment for that year discussed above.

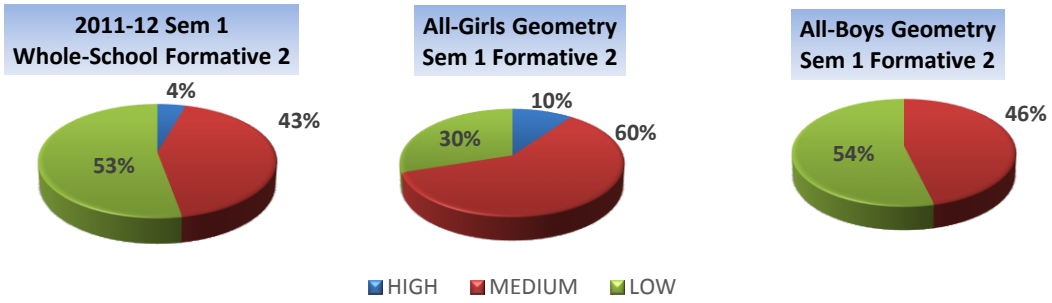

Figure 3. The three pie charts depict whole school, girls and boys formative semester one performance levels for Geometry for the 2011-2012 school year; the Geometry formative performance levels are presented by percentage at the high, medium, and low levels of performance; whole school n=157; all-girls n=10; all-boys n=12.

Geometry Formative Assessment Semester 2 in 2011-12 school year.

Figure 4 shows the test performance of students at HHS who took the Geometry Formative Assessment Semester 2 in 2011-12 school year. Once again, there was no student who scored high in the all-boys class. The medium and low scores were 50% each. The all-girl's scores were very close to the previous one. There was a decrease in the total number of students in the all-girls geometry class, which effected the percentage changes to 11.1% high, 55.6% medium, and 33.3% low. The figure reflects that on that test, the all-girls out-performed the all-boys and the rest of the whole group Geometry. This is to say that 11% of the all-girls scored in the "high" whereas the school Geometry group only scored 4% high and the all-boys did not score high at all. The similarity between the formatives for semester 1 and semester 2 show a consistency of performance for the school's Geometry student performance levels as a whole and as gender groups. This means that the all-girls did much better than the all-boys or the whole school group

in that about half of the students in both all-boys and whole group performed very "low" whereas only 33% of the all-girls performed low.

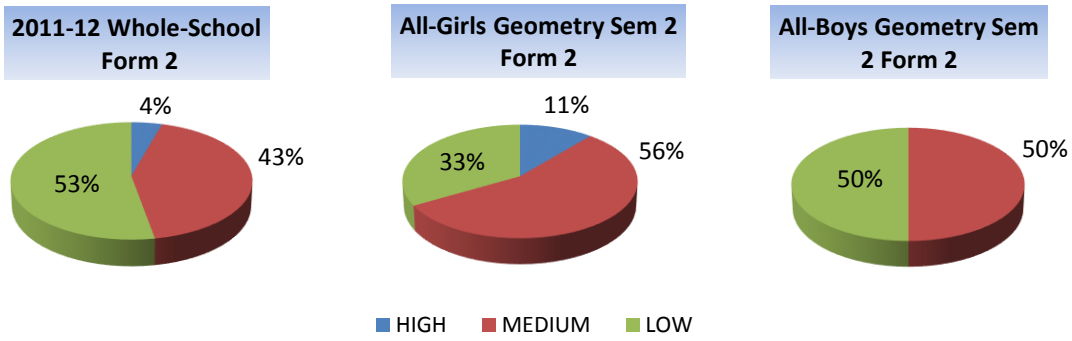

Figure 4. The three pie charts depict whole school, girls and boys Geometry semester two performance levels for Geometry for the 2011-2012 school year; the Geometry formative semester 2 performance levels are presented by percentage at the high, medium, and low levels of performance; whole school n=157; all-girls n=9; all-boys n=14.

Geometry End-of-Course (EOC) exams taken 2011-12 school-year

Figure 5 presents Geometry End-of-Course (EOC) exams taken 2011-12 school-year and how each sub group performed. The table and pie charts show the number of students who obtained different grades A to F and the percentages for that score. Neither all-boys or all-girls obtained an A grade on the EOC, but the 58.3% of the all-girls' class scored B compared to only 17.6% all boys and 19.7% for the whole school. Also, only 8.3% (i.e. only one student) of the all-girls scored D and F as compared to 35.3% earning a D and 17.6% earning a grade of F for all-boys and 26.6% D and 16.5% F for the whole school scores on the EOC. It may be of special interest to the study that boys and girls earning a C on the EOC have a close comparison with one another (boys, 29%, and girls, 25%) as well as with the entire population of Geometry students at the school at 33%. This seems to demonstrate a steady level of performance at the medium level of

performance. In contrast, boys underperform girls at the B level 18% to 59% with no A's for either.

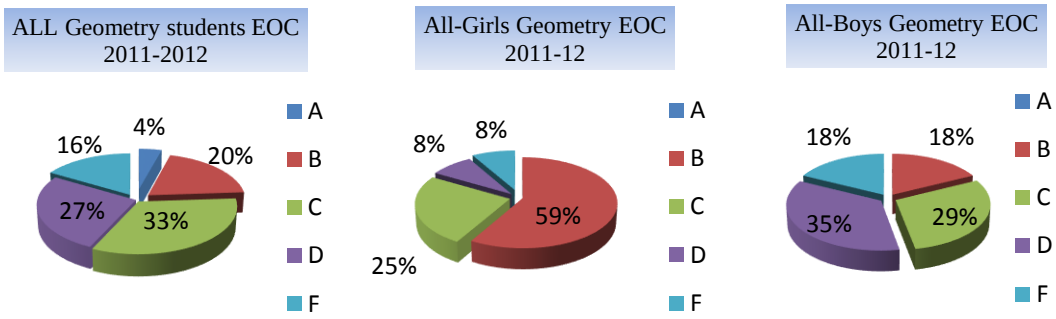

Figure 5. The three pie charts depict Geometry End of Course (EOC) Exam grades for the whole school, girls, and boys for the 2011-2012 school year; whole school n=188; students in classes under observation and study include: all-girls, n=12; all-boys, n=17.

Student Discipline Data

Although personal conduct issues are significant for the school year 2012-13, the students of interest to my study, the all-girls geometry students demonstrate high percentages in this category. It must also be noted that there are several factors that constitute "personal conduct" but that level of data is not available. Personal conduct can mean different things such as personal problem a student may feel towards another student or teacher. This may result in a verbal altercation or even a physical fight.

The all-boys group showed a slight increase in minor violations of 20% and 21% (refer to Tables 1 and 2 respectively shown below). Once again, minor violations are grouped together and are not provided in a way that could be analyzed for single gender classes since most of these violations occur outside the single-gender classes, but are not coded as such. The data obtained was unable to determine if the violations occurred in the SG classes or outside the class environment so I cannot definitively conclude on that.

The data available results in the inability to determine whether or not single gender programming effected any change. Unfortunately, we cannot sort all boys or all girls who were not in the SG classes but just the entire whole group.

Table 2. Semester 1, 2012-13 school year Discipline categories.
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different discipline categories affected them. The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 1			**All-Girls Geometry Semester 1**			**All-Boys Geometry Semester 1**		
Alcohol/Drugs	5	1.9%	Alcohol/Drugs	0	0.0%	Alcohol/Drugs	0	0.0%
Bus Violation	9	3.5%	Bus Violation	0	0.0%	Bus Violation	1	6.7%
Personal Conduct	110	42.8%	Personal Conduct	6	46.2%	Personal Conduct	8	53.3%
Minor Violation	30	11.7%	Minor Violation	0	0.0%	Minor Violation	3	20.0%
Sexual Offense	1	0.4%	Sexual Offense	0	0.0%	Sexual Offense	0	0.0%
Attendance Issue	97	37.7%	Attendance Issue	7	53.8%	Attendance Issue	2	13.3%
Fighting	5	1.9%	Fighting	0	0.0%	Fighting	1	6.7%
TOTAL	**257**	**100.0%**	**TOTAL**	**13**	**100.0%**	**TOTAL**	**15**	**100.0%**

Table 3. Semester 2 Discipline categories for 2012-13 school year.
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different discipline categories affected them. The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 2			**All-Girls Geometry Semester 2**			**All-Boys Geometry Semester 2**		
Alcohol/Drugs	5	1.9%	Alcohol/Drugs	0	0.0%	Alcohol/Drugs	0	0.0%
Bus Violation	9	3.5%	Bus Violation	0	0.0%	Bus Violation	1	7.1%
Personal Conduct	110	2.8%	Personal Conduct	6	46.2%	Personal Conduct	8	57.1%
Minor Violation	30	11.7%	Minor Violation	0	0.0%	Minor Violation	3	21.4%
Sexual Offense	1	0.4%	Sexual Offense	0	0.0%	Sexual Offense	0	0.0%
Attendance Issue	97	37.7%	Attendance Issue	7	53.8%	Attendance Issue	1	7.1%
Fighting	5	1.9%	Fighting	0	0.0%	Fighting	1	7.1%
TOTAL	**257**	**100.0%**	**TOTAL**	**13**	**100.0%**	**TOTAL**	**14**	**100.0%**

In terms of discipline at HHS, in 2011-12 school year for both semesters 1 and 2, (tables 3 and 4) both all-girls and all-boys geometry classes show a high significance percentage of personal conduct and attendance issues. In the all-girls geometry students, personal conduct for semester 1 was 46.2% (18 out of 39 students), and semester 2 with

29.2% (8 out of 27 students). The all-boys semester 1 was 29.2% and 39% semester 2. This data or tables 3 and 4 for both semester 1 and 2 show a high percentage of student personal conflict. The personal conduct identification could reflect issues a student might have with another student or with a teacher but not necessarily in a single-gender class. These are behavior problems students have at a school wide level – this could even be a conflict that happened during lunchtime in the cafeteria but coded under personal conduct in that section so it would not reflect behavior demonstrated during a single-gender class.

Table 4. Semester 1, Discipline categories for 2011-12 school year
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different discipline categories affected them. The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 1			**All-Girls Geometry Semester 1**			**All-Boys Geometry Semester 1**		
Bus Violation	14	2.4%	Bus Violation	0	0.0%	Bus Violation	3	12.5%
Personal Conduct	290	48.7%	Personal Conduct	18	46.2%	Personal Conduct	7	29.2%
Criminal Activity	1	0.2%	Criminal Activity	0	0.0%	Criminal Activity	0	0.0%
Minor Violation	54	9.1%	Minor Violation	4	10.3%	Minor Violation	1	4.2%
Sexual Offense	4	0.7%	Sexual Offense	0	0.0%	Sexual Offense	1	4.2%
Attendance Issue	216	36.3%	Attendance Issue	16	41.0%	Attendance Issue	11	45.8%
Fighting	16	2.7%	Fighting	1	2.6%	Fighting	1	4.2%
TOTAL	**595**	**100.0%**	**TOTAL**	**39**	**100.0%**	**TOTAL**	**24**	**100.0%**

Table 5. Semester 2, Discipline categories for 2011-12 school year
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different discipline categories affected them. The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 2			**All-Girls Geometry Semester 2**			**All-Boys Geometry Semester 2**		
Bus Violation	14	2.4%	Bus Violation	0	0.0%	Bus Violation	3	7.3%
Personal Conduct	290	48.7%	Personal Conduct	8	29.6%	Personal Conduct	16	39.0%
Criminal Activity	1	0.2%	Criminal Activity	0	0.0%	Criminal Activity	0	0.0%
Minor Violation	54	9.1%	Minor Violation	2	7.4%	Minor Violation	1	2.4%
Sexual Offense	4	0.7%	Sexual Offense	0	0.0%	Sexual Offense	1	2.4%
Attendance Issue	216	36.3%	Attendance Issue	16	59.3%	Attendance Issue	16	39.0%
Fighting	16	2.7%	Fighting	1	3.7%	Fighting	4	9.8%
TOTAL	**595**	**100.0%**	**TOTAL**	**27**	**100.0%**	**TOTAL**	**41**	**100.0%**

Student Attendance Data

Attendance is separated into the following categories: excused and unexcused absences, suspension and those present in Alternative to Out of School Suspension (ATOSS), tardy excused and unexcused tardy.

Tables 5 and 6 show the attendance breakdown at HHS for 2012-13 school year. As stated above, absent excused and unexcused are the two categories that reflect and significant percentages. However, these are the same as all students at the school who took geometry course. Because of that, we cannot conclude any significant correlation between the single-gender classes and attendance issues. The tables below do not reflect that being in single gender classes have a positive impact on attendance. The only category that made difference was the students present in ATOSS. We do not find any record of students in the SG classes being present in ATOSS and those on out school suspension was slight lower than the whole Geometry group, so SG students' behavior were slightly better. Although I did not compute a real statistical analysis on the students' attendance data, the results shown in the tables 5 and 6, show no record of any of the students in SG classes being in ATOSS but there were 38 times or 2.8% that the all-geometry students were in ATOSS. In addition to the suspension number of 1.7% (all-boys), 2.5% (all-girls) being slightly lower than the all geometry students (of 3.3%) made me comment that students in SG classes showed slightly positive behavior.

Table 6. Semester 1, Attendance sub groupings for 2012-13 school year
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different attendance categories affected them. The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 1			**All-Girls Geometry Semester 1**			**All-Boys Geometry Semester 1**		
Absent Excused	522	37.9%	Absent Excused	36	29.5%	Absent Excused	33	28.4%
Absent (unexcused)	557	40.4%	Absent (unexcused)	73	59.8%	Absent (unexcused)	62	53.4%
Present in ATOSS	38	2.8%	Present in ATOSS	0	0.0%	Present in ATOSS	0	0.0%
Suspended	45	3.3%	Suspended	3	2.5%	Suspended	2	1.7%
Tardy (excused)	135	9.8%	Tardy (excused)	4	3.3%	Tardy (excused)	7	6.0%
Tardy (unexcused)	81	5.9%	Tardy (unexcused)	6	4.9%	Tardy (unexcused)	12	13.5%
TOTAL	**1,378**	**100%**	**TOTAL**	**122**	**100%**	**TOTAL**	**116**	**100%**

Table 7. Semester 2, Attendance sub groupings for 2012-13 school year
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different attendance categories affected them. The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 2			**All-Girls Geometry Semester 2**			**All-Boys Geometry Semester 2**		
Absent Excused	344	20.3%	Absent Excused	35	29.4%	Absent Excused	26	24.5%
Absent (unexcused)	954	56.4%	Absent (unexcused)	71	59.7%	Absent unexcused	61	57.5%
Present in ATOSS	38	2.2%	Present in ATOSS	0	0.0%	Present in ATOSS	0	0.0%
Suspended	111	6.6%	Suspended	3	2.5%	Suspended	2	19%
Tardy (excused)	99	5.9%	Tardy (excused)	4	3.4%	Tardy (excused)	7	6.6%
Tardy (unexcused)	145	8.6%	Tardy (unexcused)	6	5.0%	Tardy (unexcused)	10	9.4%
TOTAL	**1,691**	**100%**	**TOTAL**	**119**	**100%**	**TOTAL**	**106**	**100%**

From both classes and both years 2011-12 and 2012-13, absences were the main percentages of the break down as well as the whole school. In 2012-13, the breakdown of unexcused absences was 56.4% for all students in geometry, 59.7% for all-girls, and 57.5% for all-boys. The all-students in Geometry were 45.8% with 51.8% for all-girls and the boys were absent unexcused 44.1% times that semester in 2011-12. So even though no statistical analysis was performed, by looking at the tables, one can conclude that attendance was not a problem with just the single-gender classes. Students were absent whether or not they were enrolled in single-gender classes.

The tables below do not reflect that being in single gender classes have a positive impact on attendance.

However, the only category that made difference was the students present in ATOSS. We do not find any record of students in the SG classes being present in ATOSS and those on out school suspension for all girls was slight lower than the whole Geometry group, but all boys was not the case. Hence I concluded that girls in the SG classes' behavior were slightly better than the rest.

I came up with that conclusion because Table 8 shows no record of any of the students in SG classes being in ATOSS but there were 23 times or 1.2% that the all-geometry students were in ATOSS. In addition to the suspension number of 2% (all-girls), is slightly lower than the all geometry students (of 4.5%). In Table 9 for 2011-12, Semester 2 the all-girls were suspended 10 times (4.6%); the all-boys suspended 16 times which is 6.9%, which both are slightly lower than the all geometry students (of 7.2%). This made me comment that students in SG classes showed slightly positive behavior.

Table 8. Semester 1, Attendance sub groupings for 2011-12 school year.
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different attendance categories affected them.
The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 1			**All-Girls Geometry Semester 1**			**All-Boys Geometry Semester 1**		
Absent Excused	703	35.6%	Absent Excused	69	35.0%	Absent Excused	33	29.7%
Absent (unexcused)	905	45.8%	Absent (unexcused)	102	51.8%	Absent (unexcused)	19	44.1%
Present in ATOSS	23	1.2%	Present in ATOSS	0	0.0%	Present in ATOSS	0	0.0%
Suspended	88	4.5%	Suspended	4	2.0%	Suspended	9	8.1%
Tardy (excused)	112	5.7%	Tardy (excused)	6	3.0%	Tardy (excused)	5	4.5%
Tardy (unexcused)	143	7.2%	Tardy (unexcused)	16	8.1%	Tardy (unexcused)	15	13.5%
TOTAL	**1,974**	**100%**	**TOTAL**	**197**	**100%**	**TOTAL**	**111**	**100%**

Table 9. Semester 2, Attendance sub groupings for 2011-12 school year
This table below shows a comparison among the all-girls all-boys, and the whole school students in Geometry, showing how different attendance categories affected them. The number of violation in each column is converted into percentages.

ALL Geometry Students Semester 2			**All-Girls Geometry Semester 2**			**All-Boys Geometry Semester 2**		
Absent Excused	775	29.2%	Absent Excused	56	25.9%	Absent Excused	52	22.5%
Absent (unexcused)	1,265	47.6%	Absent (unexcused)	96	44.4%	Absent (unexcused)	126	54.5%
Present in ATOSS	18	0.7%	Present in ATOSS	1	0.5%	Present in ATOSS	3	1.3%
Suspended	191	7.2%	Suspended	10	4.6%	Suspended	16	6.9%
Tardy (excused)	105	4.0%	Tardy (excused)	12	5.6%	Tardy (excused)	6	2.6%
Tardy (unexcused)	301	11.3%	Tardy (unexcused)	41	19.0%	Tardy (unexcused)	28	12.1%
TOTAL	**2,655**	**100%**	**TOTAL**	**216**	**100%**	**TOTAL**	**231**	**100%**

Interpretation of Teacher Survey

As far as the teacher survey is concerned, most of the SG teachers, 62.5% of those who turned in said that the students are more comfortable in expressing themselves in class compared to their co-ed class. Half of the teachers (50%) of those who completed the surveys said that overall, teaching SG classes have been a positive experience. This was also some of the words used to describe their SG teaching experience on the open-ended question. Other areas that have a 50% rating from the survey tally were on question number 2, 4, and 8. These are pertaining to students in the SG classes having higher-grade average compared to the co-ed class, students completing assignments more efficiently and teachers using at least two SG strategies in their classroom. The disciplinary issue seems to even across: 37.5% disagreed, 37.5% agreed, 12.5% strongly agreed and 12.5% had no opinion regarding students in the SG classes having less disciplinary problems in class compared to their co-ed classes

However, the area of focus is motivation. Fifty percent (50%) of the SG teachers disagreed that SG students are more interested or motivated in class compared to their co-

ed classes. The teaching experience of the SG classes was a tossup among the surveys I received – either positive experience or challenging. Commenting on the great accomplishment, the common theme seem to be team work, bond between students and teacher and the comfort level of the students to express themselves in the SG classes.

Interpretation of Student Data

In general, the all-girls Geometry classes did better on the Formatives and End of Course exams compared to all the students taking the Geometry in the school. The all boys sometimes did OK or about the same as everybody else in the school, but did not out-perform. Maybe if more data from other disciplines were collected, or there were more than two Single Gender Geometry classes data collected, results may have been different.

In terms of attendance, there was no significance between the students of the SG classes and the rest of the geometry students in the school. This is almost true with disciplinary actions but the type of discipline breakdown may have a lesser offense from some of the SG classes in general. For instance, in 2012-13 school years, for all girls' geometry students, the only disciplinary issues were personal conduct and attendance. It must be noted that these offenses were not only committed in their single gender classes but other classes as well as the cafeteria, buses, and pretty much anywhere on campus. Because of that, attendance and disciplinary charts and graphs may not show how significant or impact on these areas by being single-gender classes had.

SECTION FIVE: JUDGMENT & RECOMMENDATIONS

Judgment

Some unforeseen circumstances occurred after I submitted my written proposal. The district approved the use of only Geometry teachers for data and interviews, and only for the study to survey other single-gender teachers. The interview data is thus limited to the results from my interview of only two geometry teachers. In addition, surveys of the administrators were not permitted to occur until after the end of the school year. Hence, only one administrator survey result was included in this paper. Furthermore, my initial proposal was to collect data from other disciplines such as reading and English, but I was only allowed to collect math-Geometry data. This has resulted in a very small sample size with only one discipline included. These limitations has prohibited my ability to substantively review and reflect or fully confirm research data findings though did allow me to get a glimpse into the potential of this study when further data collection may become available. Furthermore, I was given permission to use 2012-13 and 2011-12 school data rather than more recent 2013-14 and 2012-13 data that I had anticipated having access for analyses purposed. Not all of the results of the 2013-14 would have been available for analysis purposes; these included the Geometry EOC results or Formative 2 results.

On a positive note, this made the collection of the data easier, as the sample size was very small and limited to one discipline, Geometry. On an added note, I am very personally familiar with the Geometry curriculum and what it entails.

Recommendations

My recommendations in order to evaluate the effectiveness of the single gender (SG) programs at Hopkins High School, is to sample more data besides the Geometry which was only two classes with two teachers. The surveys only would not share a light on the findings of the effectiveness. Furthermore, the attendance is an issue anywhere whether in a SG class or coeducational class. Also from the surveys and interview, I gathered that some changes could be done by administration as to how the students are scheduled in the SG classes. There should be a balance of the level of performance, instead of having mainly the level 1 & 2, low pre-requisite skills and students with prior behavior problems. The students should also have a buy-in before they are scheduled to be in the SG class not afterwards. Moreover, the teachers need to continue to receive training and use different teaching strategies.

From other research, I have looked into and experience, I think that if the classes were looped, that is the same group of students followed the same teacher for more than a year, there could be some consistencies among the SG classes and hopefully show increase in students' academic performance.

Another recommendation that I will pursue in my next part of my dissertation is to analyze the single gender program by using a cohort model. This is where the same group of students attends different classes together. In this case, the teachers in the cohort will be able to collect data, form one professional learning community to discuss the same group of students' data and other disciplinary issues. As a result, there would be consistency in the procedures and expectations of the students in the classes they attend together.

Conclusion

Single-gender classes or single-gender school in general is dear to me and something I am familiar with since I attended an all-girls single-gender high school. I like the structure, culture and discipline that the school provided and instilled in me. It could also be because it was a Catholic school which had strong religious and strict values to conform to. Not every student can "survive" in that environment especially if you do not like following strict rules or not Catholic. I was not a Catholic (school open to everyone) but I had to abide by their rules and some of the Catholic traditions when it came to Sundays and attend weekly and some daily mass, etc.

Anyway, back to this research project, I found that there were some inconsistencies or no clear definitive answers as to how effective the single-gender program is at Hopkins High School. Part of this is due to the fact that the sample size was small; only student data from Geometry classes and only two Geometry teachers were interviewed (according to the District Approval directions to only interview and collect student data from Geometry). However, the test scores of the all-girls geometry classes were slightly higher than the all-boys and the mixed geometry classes. By students being in single-gender classes had no effect on attendance. From the charts and figures above, students were still absent as compared to other mixed classes.

Furthermore, to get a better picture and for the single gender program to work effectively and increase students' achievement level, lower disciplinary actions and maybe attendance, I think that these students should also be taught in a cohort model and maybe looping of some of the classes that are continuous like math and English. This will bring more consistencies in the procedures and expectations in all the single gender

classes and the teachers can better track the progress and have a discussion when they meet in Professional Learning Communities regularly. I have faith in single-gender classes or single-gender schools as this is a common practice in other countries so it can be done here in the U.S. with careful planning and reviews.

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APPENDIX A

A Single Gender Programming in a High School Setting
Research Study by Agnes Ghansah, Doctoral student at National Louis University

Teacher Survey

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

	Strongly Disagree 1	**Disagree 2**	**Agree 3**	**Strongly Agree 4**	**No Opinion**
1.Overall, teaching single gender class(es) has been a positive experience for me.					
2. Generally, my single gender class average is higher than my coed class of the same course.					
3. Compared to students in my coed classes, my single gender students are more interested and motivated in my class.					
4. Generally, compared to students in my coed classes, my single gender students complete assignments more efficiently.					
5. Compared to students in my coed classes, my single gender students have less disciplinary problems in my class					

	Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4	No Opinion
6. Compared to my other coed classes, my single gender students are more comfortable to express themselves in class.					
7. I have attended and/or received sufficient training dealing with single-gender strategies and research studies.					
8. I have used at least two single gender strategies in my classroom this school year.					

9. How would you describe your single gender teaching experience?

10. What is the greatest accomplishment and success or benefit when teaching single gender class(es)?

Thank you for your time.

APPENDIX B

A Single Gender Programming in a High School Setting

Research Study by Agnes Ghansah, Doctoral student at National Louis University

Administrative Survey

Current Position: Circle one

1. Principal
2. Assistant Principal
3. Guidance Counselor

Other:_____

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

	Strongly Disagree 1	**Disagree 2**	**Agree 3**	**Strongly Agree 4**	**No Opinion**
1. Overall, I have seen positive experience(s) in having single gender classes at this school.					
2. Generally, the single gender classes at this school have higher-class averages than the coed classes of the same course.					
3. Compared to students in other coed classes, the single gender students are more interested and motivated in class.					
4. Generally, compared to students in other coed classes, the single gender students complete assignments more efficiently.					

	Strongly Disagree 1	**Disagree 2**	**Agree 3**	**Strongly Agree 4**	**No Opinion**
5. Compared to students in coed classes, the single gender students have less disciplinary problems in their classes					
6. Generally, compared to other coed classes, the single gender students are more comfortable to express themselves in class.					
7. I have attended and/or received sufficient training dealing with single-gender strategies and research studies.					
8. My single-gender teachers have attended and/or received sufficient training dealing with single-gender strategies and research studies.					

9. How would you describe your single gender experience at this school?

10. What is the greatest accomplishment and success or benefit to having single gender classes at this school?

Thank you for your time.

APPENDIX C

A Single Gender Programming in a High School Setting

Research Study by Agnes Ghansah, Doctoral student at National Louis University

Teacher Interview Protocol

1. How many years of teaching experience do you have?

2. How many years have you taught at this school?

3. How many years have you taught single gender classes?

    a. Have they all been at this school or another school?

    b. If you have taught at another school, at what grade level and how does that compare to the one at this school?

4. Which single gender class have you taught in the past and/or currently teaching? That is what subject, course, grade level , and all boys or girls do you have your single gender class(es)?

    a. If you are not currently teaching single gender class this year, may I ask why?

5. Which single gender (all girls or all boys) class do you prefer and why?

6. What period of the day do you teach your single gender class(es)?

    a. Do you find any difference with the students' academic performance and behavior due to the difference in period of the day that you teach them?

7. Compared to your coed classes of the same course how are your single gender students' self-confidence and comfort level in expressing themselves in your classes?

8. Compared to students in your coed classes, what can you say about disciplinary problems and attendance of your single gender?

9. Compared to students in your coed classes, what have you observed about the interest and motivation in class with your single gender students?

10. In general, how does your single gender academic class average compare to your coed class of the same course?

11. What can tell me about the work ethics of your single gender students in terms of being on task, completing class and homework assignments efficiently, etc.?

12. Overall, how do you find your teaching experience with single gender class(es) so far?

    a. What word or phrase would you use to describe your single gender teaching experience?

    b. What is the greatest accomplishment and success or benefit for having to teach single gender class(es)?

13. Would you teach single gender class again next year if it was offered and why?

    a. If so do have a preference as to all boys or all girls, what course, grade level, and why?

14. To your knowledge, have you attended and or received sufficient training dealing with single-gender strategies and research studies?

    b. Did you attend training during this academic school year or during the summer?

    c. If so, which ones have you attended or plan on attending and felt they were or would be beneficial?

15. Can you tell me some of the single gender strategies you have learned and used in your classes this year? Did that make a difference in the teaching and learning?

Thank you very much for your time.

APPENDIX D

Informed Consent

Individual Participant Survey

I am asking you to participate in a research study conducted by me, Agnes Ghansah, doctoral student at National Louis University, Tampa, Florida. The study is entitled a Single Gender Programming in a High School Setting. In 2011, Hillsborough County Schools in Florida embraced single-gender education. In the fall of the same year, our school experimented and implemented a single gender all-boys and another all-girls class in math, reading, and English. This program separates boys and girls in classrooms. Teachers use different types of teaching strategies based on research. The strategies enable students to achieve at higher levels, and reduce discipline problems in schools. I would like to evaluate this program in my school about how effective it is and what changes might need to be made. In addition, I would like to know if there are other factors influencing the success or failure of this program.

I will gather data collected from various places in relation to my questions and topic. I will also look at a comparison group, which is a coed class of the same type of course content, to compare with the single gender type. Furthermore, I will review the literature for data from other schools that have single gender classes and how effective they are.

Participants should expect to receive a survey packet, including a printed survey to be completed and returned using specific instructions as included, as well as an informed consent form to be signed and returned indicating your willingness to participate. All information collected reflects your opinion and experience with students and the program.
With your consent, you will complete a two-page written survey, noting at the end if you agree to be interviewed. If you agree to the interview portion, then later, upon your consent, you will be interviewed for about 30 minutes with a possible second, follow-up interview lasting 30 minutes. Upon request, you will receive a copy of your transcribed interview at which time you may clarify information.

Your participation is voluntary and you may discontinue your participation at any time without penalty. Your identity will be kept confidential by the researcher and will not be attached to the data. Only the researcher will have access to all transcripts, taped recordings, and field notes from the interview(s), which I will keep in a locked cabinet at my house, which only I have access to. Your participation in this study does not involve any physical or emotional risk to you beyond that of everyday life. While you are likely to not have any direct benefit from being in this research study, your taking part in this study may contribute to our better understanding of student needs and how to improve the single-gender program at our school. While the results of this study may be published or otherwise reported to scientific bodies, your identity will in no way be revealed.

In the event you have questions or require additional information, you may contact the researcher: Agnes Ghansah, National-Louis doctoral student, phone: 813-272-3422; email: aghansah @my.nl.edu.

If you have any concerns or questions before or during participation that you feel have not been addressed by the researcher, you may contact Dr. Carol Burg, email: cburg@nl.edu, phone: 813-397.2109, address: 5110 Eisenhower Blvd. Suite 102 Tampa FL 33634 or the NLU's Institutional Research Review Board: Judah Viola, National Louis University, 122 South Michigan Avenue, Chicago, IL 60603; phone: 312-261-3527; email: judah.viola@nl.edu.

_____
Participant Name (Print)

_____ _____
Participant Signature Date

_____
Researcher Name (Print)

_____ _____
Researcher Signature Date

APPENDIX E

Informed Consent

Individual Participant Interview

I am asking you to participate in a research study conducted by me, Agnes Ghansah, doctoral student at National Louis University, Tampa, Florida. The study is entitled a Single Gender Programming in a High School Setting. In 2011, Hillsborough County Schools in Florida embraced single-gender education. In the fall of the same year, our school experimented and implemented a single gender all-boys and another all-girls class in math, reading, and English. This program separates boys and girls in classrooms. Teachers use different types of teaching strategies based on research. The strategies enable students to achieve at higher levels, and reduce discipline problems in schools. I would like to evaluate this program in my school about how effective it is and what changes might need to be made. In addition, I would like to know if there are other factors influencing the success or failure of this program.

I will gather data collected from various places in relation to my questions and topic. I will also look at a comparison group, which is a coed class of the same type of course content, to compare with the single gender type. Furthermore, I will review the literature for data from other schools that have single gender classes and how effective they are.

With your consent, I would like to interview you. If you agree to the interview, I will interview you for about 30 minutes with a possible second, follow-up interview lasting 30 minutes. Upon request, you will receive a copy of your transcribed interview at which time you may clarify information.

Your participation is voluntary and you may discontinue your participation at any time without penalty. Your identity will be kept confidential by the researcher and will not be attached to the data. Only the researcher will have access to all transcripts, taped recordings, and field notes from the interview(s), which I will keep in a locked cabinet at my house, which only I have access to. Your participation in this study does not involve any physical or emotional risk to you beyond that of everyday life. While you are likely to not have any direct benefit from being in this research study, your taking part in this study may contribute to our better understanding of student needs and how to improve the single-gender program at our school.

While the results of this study may be published or otherwise reported to scientific bodies, your identity will in no way be revealed.

In the event you have questions or require additional information, you may contact the researcher: Agnes Ghansah, National-Louis doctoral student, phone: 813-272-3422; email: aghansah@my.nl.edu.

If you have any concerns or questions before or during participation that you feel have not been addressed by the researcher, you may contact Dr. Carol Burg, email: cburg@nl.edu, phone: 813-397.2109, address: 5110 Eisenhower Blvd. Suite 102 Tampa FL 33634 or the NLU's Institutional Research Review Board: Judah Viola, National Louis University, 122 South Michigan Avenue, Chicago, IL 60603; phone: 312-261-3527; email: judah.viola@nl.edu.

_____

Participant Name (Print)

_____ _____

Participant Signature Date

_____

Researcher Name (Print)

_____ _____

Researcher Signature Date

APPENDIX F

Informed Consent

School Site Administrator

I am asking you to participate in a research study conducted by me, Agnes Ghansah, doctoral student at National Louis University, Tampa, Florida. The study is entitled a Single Gender Programming in a High School Setting. In 2011, Hillsborough County Schools in Florida embraced single-gender education and established a pair of Tampa middle schools as separate boys and girls' academies. In the fall of the same year, our school experimented and implemented a single gender all-boys and another all-girls class in math, reading, and English. This program separates boys and girls in classrooms. Teachers use different types of teaching strategies based on research. The strategies enable students to achieve at higher levels, and reduce discipline problems in schools. I would like to evaluate this program in my school about how effective it is and what changes might need to be made. In addition, I would like to know if there are other factors influencing the success or failure of this program.

I will gather data collected from various places in relation to my questions and topic. I will also look at a comparison group, which is a coed class of the same type of course content, to compare with the single gender type. Furthermore, I will review the literature for data from other schools that have single gender classes and how effective they are.

Participants should expect to receive a survey packet, including a printed survey to be completed and returned using specific instructions as included, as well as an informed consent form to be signed and returned indicating your willingness to participate. All information collected reflects your opinion and experience with students and the program.
With their consent, participants will complete a two-page written survey, noting at the end if they agree to be interviewed. If they agree to the interview portion, then later, upon consent, they will be interviewed for about 30 minutes with a possible second, follow-up interview lasting 30 minutes. Upon request, they will receive a copy of their transcribed interview at which time they may clarify information.

All participation is voluntary and you may discontinue your participation at any time without penalty. Your identity will be kept confidential by the researcher and will not be attached to the data. Only the researcher will have access to all transcripts, taped recordings, and field notes from the interview(s), which I will keep in a locked cabinet at my house, which only I have access to. Participation in this study does not involve any physical or emotional risk beyond that of everyday life. While you are likely to not have any direct benefit from being in this research study, your taking part in this study may contribute to our better understanding of student needs and how to improve the single-gender program at our school. While the results of this study may be published or otherwise reported to scientific bodies, your identity will in no way be revealed.

In the event you have questions or require additional information, you may contact the researcher: Agnes Ghansah, National-Louis doctoral student, phone: 813-272-3422; email: aghansah@my.nl.edu.

If you have any concerns or questions before or during participation that you feel have not been addressed by the researcher, you may contact Dr. Carol Burg, email: cburg@nl.edu, phone: 813-397.2109, address: 5110 Eisenhower Blvd. Suite 102 Tampa FL 33634 or the NLU's Institutional Research Review Board: Judah Viola, National Louis University, 122 South Michigan Avenue, Chicago, IL 60603; phone: 312-261-3527; email: judah.viola@nl.edu

_____
Participant Name (Print)

_____ _____
Participant Signature Date

_____
Researcher Name (Print)

_____ _____
Researcher Signature Date