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# Academic and Musical Success by Gender Separation

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## Abstract

This literature review presents the history of the traditional American coeducational classroom, studies regarding the results and benefits of implementing gender-separated classrooms, and the discussion of how music education classrooms could find value in the research relating to gender separation. With the allowance of increased studies regarding single-sex versus coeducational classrooms in the United States since the early 2000s, more researchers are aiming to understand what setting is most advantageous for students and their overall academic experience. The literature review will present information from scholarly-based articles, research study findings, and other reputable sources that highlight the statistical results and overall advantages of separating students by gender in educational settings.

**Academic and Musical Success by Gender Separation**

Despite early controversy, single-gender classroom experimentation is on the rise in the United States. According to Novotny (2011), it wasn't until 2006 when the United States Department of Education loosened its allowance for schools to conduct thorough research regarding the benefits of single-gender compared to coeducational classrooms. Until this time, coeducational classrooms were traditionally the norm in nearly every public school in the country since the early nineteenth century. While many other countries across the world were consistently studying how children learn best, and what strategies educators and school districts could facilitate to further their educational progress, studies and data are still developing in the United States in regards to alternative classroom settings.

Not only do males and females evolve differently physiologically, but also exhibit differentiation in how they learn academically. After extensive observation and research based on the differences of academic learning between male and female students, Hughes (2011) describes learning variations in spatial needs, kinesthetic learning, and collaborative learning as elements in which single-gender classrooms may be beneficial for students. Additionally, with the obvious physiological benefits of gender separation, research has found that educators may find it advantageous to teach to specific gender learning styles and needs, and that the gender separation has helped classroom management and student engagement.

Furthermore, while the United States has increased its research concerning single-gender classrooms in the past decade, the main content areas represented by the studies

have been in the core subject areas. This literature review will also examine the benefits and effects of gender-separation in the area of music education. Not only does gender align with important physical differences in relation to musical skills, the teaching strategies in which music educators could utilize in their classrooms would be able to be gender-specific, allowing for more effective teaching. With approximately 70% of American females, and 30% of American males participating in music classes (Jacobs, 2014), it would be valuable for schools to extend studies to other subject areas where students are learning valuable skills and aiming for high academic achievement.

The presented research will show student achievement across various content areas may be positively influenced when students are taught in single-sex classroom settings. How has the traditional American classroom construct evolved since the early nineteenth century, how have previous studies exhibited the value of single-sex classrooms, and specifically in terms of music education, what research has been carried out to examine how single-gender music classrooms can benefit student learning and achievement?

## Literature Review

Throughout the course of the American educational structure, coeducational classrooms have been the tradition. Although constitutional rights and policies across American history have included controversial and significant gender issues, most academic classrooms were made up of both males and females consistently beginning in the early nineteenth century. While other countries around the world believed "coeducational classrooms seemed strange and disturbing; to most Americans they

became a natural and unquestioned part of the educational landscape" (Tyack & Hansot, 1992, p. 1). Gender has natural and biological basis unquestionably, but the social norms, cultures, and differences are what create many inquiries into how both genders interact, affect, and live cohesively amongst each other. Even though many times children of same genders may congregate or align with each other outside of the school setting, for purposes of socializing, playing sports, or engaging in gender-stereotyped hobbies, during the school day, "teachers will mix them in classrooms where coeducation is the institutional norm" (Tyack & Hansot, 1992, p. 7). Although the vast majority of American schools have been coeducationally structured since the addition of females being included in the academic society in the early-nineteenth century, the manner in which each gender was treated and the subjects that were offered or focused upon was diverse in each specific school district. Examples of these dissimilarities include separate physical education classes, different dress codes for each gender, and athletic opportunity inequalities (Tyack & Hansot, 1992).

Along with the variances in which different genders were treated in schools, one must also acknowledge the learning and behavioral differences observed among males and females. Just as students of different ages, academic abilities, and socio-economic or diverse cultural backgrounds, genders learn differently. Schools and educators must take note of these differences, and make accommodations and efforts to incorporate all learners and their learning styles. If teachers are able to teach to the academic and psychological strengths or needs of each gender separately, they may be more effective, producing higher achievement and learning within their classroom. Teresa Hughes (2011) describes three main environmental learning-style differences between male and

female students. The first difference being the needed classroom and learning space. Males, especially at younger ages, "tend to use a lot of space" (Hughes, 2007, p. 11). If single-sex classrooms are employed, the district and teacher will be able to accommodate such space needed for academic purposes, hoping to increase student learning and achievement. Next, research shows that "boys need movement to increase their learning" (Hughes, 2007, p. 11). While kinesthetic learning strategies are beneficial to both genders, if boys tend to profit from additional movement implementations, teachers dedicated to educating single-sex students would be able to provide these valuable activities. Lastly, the author describes each gender experiencing collaboration in the classroom differently. While females tend to work more effectively with one another within group settings, males tend to focus more "on the task at hand, and not the social interactions and sensitivity to the emotions of those around them" (Hughes, 2007, p. 12). With the evidence of psychological differences, and seemingly positive engagement and motivational benefits to separating students by gender, educational stakeholders should study and explore the topic of gender-separation in schools more extensively.

It was not until 2002 in the United States when the No Child Left Behind (NCLB) Act allowed special funds to be allocated toward experimenting with single-gender classrooms and schools that many outside sources challenged the traditional coeducational academic structure. Until this time, it was illegal and unethical to separate students academically by gender in public school settings. American education was beginning to fall in standardized test results and technological aptness to other world adversaries of education, so it was believed to be the time to make some changes and look to different academic structures and considerations regarding school culture,

teaching strategies, and classroom constructs. In 2006, the United States Department of Education "loosened its Title IX regulations to diminish prohibitions on single-sex education in public schools" (Novotney, 2011, para. 3). In the journal article *Coed Versus Single-Sex Ed* there were 95 single-sex public schools, and more than 445 public coeducational schools that offer single-sex classrooms in America (Novotney, 2011). Since this is a relatively new topic being explored and researched, especially in American public schools, most of the conducted examinations and results have come from studies administered in educational institutions overseas.

In one of many notable international disquisitions, researchers Gerald Eisenkopf, Zohal Hessam, Urs Fischbacher, and Heinrich W. Ursprung (2011) conducted a study to understand if offering single-sex courses could solve a previously documented gender gap in academic performance between females and males in mathematics and German language classes. The research team felt that female students in coeducational classes, they might experience anxiety or concern when participating in courses with their male counterparts. Many educational stakeholders and members of society believe males tend to be higher-achieving in the subjects of mathematics and language learning than females, so this study would also incorporate such stigma. The research and data collection spanned approximately four years, and involved 808 Swiss high school students throughout its course of action. The Swiss High School Administration of Education was concurrently conducting research based on single-sex classroom and its benefits, so the research team took advantage of this experiment (Eisenkopf et al., 2011).

Female high school students were randomly placed in either single-sex or coeducational mathematics and language learning courses, and throughout the research

period, the findings were intriguing. The females in the single-sex mathematics classes obtained better math grades than female students in coeducational classes, with an average "performance increase of approximately 10% of the relevant range," (Eisenkopf et al., 2011, p. 18). The researchers also noted that the female students involved in the single-sex math classes presented a more positive outlook on their personal math abilities than the coeducational class participants. The findings in relation to the language classes were less pronounced. Females involved in the single-sex language learning classes "do not outperform students in mixed classes" (Eisenkopf et al., 2011, p. 20). These female students also did not maintain a difference of their personal achievement skills in the language classes. This study presents findings that support the single-sex benefits to learning and achievement in the classroom. While the researchers specifically focused upon mathematics and language classes, the statistics exhibit the advantages to teaching a single-sex grouping that should be assumed to benefit same-sex classes across content areas. Many external factors played part in the research findings, but it can be presumed that the female participants in the single-sex classroom felt more secure, unreserved, and empowered in such learning environment.

Another important study conducted in Australia in 2000 by the Australian Council for Educational Research (ACER) examined the test scores and percentile ranks of coed and single-sex schools. The study spanned six years, involved 270,000 student participants, and 53 academic subjects (NASSPE, 2016, para. 25). The research team found that students of both genders scored on average 15 to 22 percentile ranks on national standardized tests than their counterparts educated in coeducational classroom settings (2016). The Australian Council for Education also found that "boys and girls in

single-sex schools were likely to be better behaved and to find learning more enjoyable and the curriculum more relevant" (NASSPE, 2016, para. 25). The report also mentions that teachers found it more difficult to accommodate the various styles of learning and behavior represented in a coed classroom, than to focus on the characteristics and aspects of teaching to one gender.

In one of the first studies conducted in the United States regarding single-sex classroom, researchers with the National Association for Single Sex Public Education (NASSPE) set their sights on a Florida school district. Stetson University conducted a research study that lasted ten years, ending in 2013, in which single-sex classrooms were compared with coed classrooms at local Woodward Avenue Elementary School. The researchers' objective was to explore the differences in which boys and girls learn in classroom settings, and if there were benefits in separating the students by their gender. The research involved fourth graders, and these students were assigned either a single-sex or coed classroom with equal classes sizes, personnel demographics, and equally trained and tenured teachers. The results of the Florida Comprehensive Assessment Test showed that single-sex classes scored much higher than those in the coed classes. The boys in coed classes were 37% proficient, while the boys in single-sex classes were 86% proficient (NASSPE, 2016). The results were not as contrasting with the girls' results as girls in the coed classes were 59% proficient, while girls in single-sex classrooms were 75% proficient (NASSPE, 2016). With equal and matched parameters in regards to class size, demographics, and teacher level, the results were overwhelming in the benefits to single gender classrooms. The variables of this action research are slim, but the specific student demographics of each classroom may play a slight role in the overall results. As

an interesting update, Stetson University reported that within the continuation of the single-sex versus coed classroom performance comparisons, the gap between each class section was narrowing (NASPPE, 2016). According to the researchers, the single-sex classrooms remained high-performing, but the coed classes were catching up in terms of proficiency percentages. "After extensive interviews with the teachers, the Stetson (2016) researchers believe that the coed classrooms are catching up because the teachers are learning how to deploy the strategies learned in the single-gender classrooms in coed classrooms" (para. 15). These findings are important because although it appears the coed classrooms are becoming more effective and results are beginning to threaten the high-performing percentages of the single-sex classes, the researchers accredit the teaching strategies the teachers found effective in the single-sex classrooms to work for the students in the coed classrooms. By embracing and sharing what teachers and students in single-sex classes accomplished, other educators can positively affect other groupings of students, no matter the gender.

Researchers have also begun to narrow their studies to hopefully understand if single-sex classrooms are more advantageous for females or males in academic settings. Females have a stereotyped history of being known as better students, more engaged and self-motivated in school settings, and exhibiting more mature and professional behavior throughout school. Males have been noted as being more rambunctious, immature, and not as driven academically throughout their school years. Of course these are obvious generalizations, and it is common knowledge that any child can depict behaviors and motivation influencing academic success or ineffectiveness no matter their gender.

In her doctoral dissertation, researcher Rhonda Hill (2011) aimed to address how male and female students' mathematical test scores on the Measures of Academic Progress (MAP) test were affected when taught with gender-specific instructional strategies in single-sex classrooms. Each teacher was previously provided professional development in gender learning styles (Hill, 2011). Hill (2011) states,

> "Additionally, the instructors in the female groups will use a softer voice tone, collaborative learning in groups, more communication opportunities, additional teacher direction, and encouragement. For the male groups, the instructors will use a louder voice tone, collaborative learning in partners, strategies that provide the students the opportunities to move actively about the room, and the use of competitive activities." (p. 12)

Main factors taken into account within this study included how each group of students would grow in their mathematic skills in relation to the MAP test scores, how effective the teacher would become by utilizing teaching strategies designed for specific genders' success, and the search for more meaningful educational experiences for students, as schools across the United States seek answers on how to coerce change into our declining international educational ranking.

The 152 student participants involved in this study were in the sixth grade at an unnamed suburban middle school in the southeastern part of the United States, and consisted of no more than thirty students per group of two male, two female, and two coeducational mathematics classes. The demographics of the total groups were predominately Caucasian and African-American, and from lower-socioeconomic homes

(62% free or reduced lunch) (Hill, 2011). When comparing results at the conclusion of the study, from the Fall 2010 MAP test scores to the Spring 2011 MAP test scores, growth was achieved from all of the six participatory groups. The research states that, "The single-gender males had 60.0% achievement growth; the single-gender females group reached 82.4% achievement growth; the coeducational group attained 80.0% achievement growth; the coeducational males earned 82.6% achievement growth; and the coeducational females reached 72.7% achievement growth" (Hill, 2011, p. 74). Overall, all student groups exhibited a growth of at least 60% over the school year. Even though the single-gender males presented the least amount of growth percentage, any growth is a positive indication that the teaching strategies proved to be effective. The variables may have influenced this study in terms of not knowing if any students had Individualized Educational Program, were involved with mathematic interventions, or had behavior or physical concerns hindering their previous academic growth. Also, theories regarding the gender of each group's teacher, and the affect this may have over certain students and their engagement or motivation, could be an additional area to explore and research in future studies. Hill (2011) concluded her study findings with stating, "It cannot be clearly stated whether single-gender significantly impacts learning; however, it is clear that single-gender classrooms do not negatively impact achievement. Although it is not the panacea or magic potion that should be prescribed for all students to cure the educational ills, single-gender should continue to be offered as a viable option for certain students" (p. 92).

While much of the available published research regarding gender-separated classrooms focused predominately on how male students were affected, a study by

UCLA researchers, Linda Sax, Tiffani Riggers, and M. Kevin Eagan (2013), aimed to focus on the role of single-sex education in the lives of college-bound females. The report begins by stating, "In both high school and college, women appear to be more academically engaged than men" (Sax et al., 2013, p. 4). This may be true according to studies and data reports, but the researchers were determined to understand if females whom attended single-sex schools fared better academically, were more engaged, and more involved in their high schools than females that attended coeducational school settings. The study is based on results from the 2005 Cooperative Institutional Research Program (CRIP) Freshman Survey. The survey was completed by 263,710 students at 385 colleges and universities across the United States (Sax et al., 2013). For this specific study, the researchers "identified a subset of women who attended private high schools, including 6, 842 women who graduated from 250 all-girls high schools, and 19,327 women of 2,047 coeducational high schools" (Sax et al., 2013, p. 10). Many demographics were represented including various races, representation from multi-socio-economic statuses, and various religious backgrounds. The outcome of the surveys showed the females whom attended the single-sex schools scored higher than their coeducational counterparts on the academic engagement factor (Sax et al, 2013). The results also showed that "62% of the females from single-sex schools reported spending more than 10 hours per week studying or doing homework in high school, compared to only 42% of females from the coeducational schools" (Sax et al., 2013, p. 16). Further findings report that females from single-sex schools had more personal interaction with their teachers (36.7%) compared to the females from coeducational schools (29.6%), and that 43.3% of single-sex school participants spent more than three hours per week

involved in extra-curricular activities, in contrast to the 36.6% of coeducational school female participants.

There may be numerous variables associated with this study, such as costs of private school tuition, size of school pertaining to increased extra-curricular opportunities, and various levels of overall teacher skills and utilized teaching strategies, but the data results do show support for the benefits of single-sex classrooms. Interestingly enough, the study mentioned that, "No interactions were found between gender and either race or class, leading to the implication that the benefit of single-sex education on women's engagement may be the same for students across race and class lines" (Sax et al., 2013, p. 22). This is a significant conclusion when exploring the merit and understanding of gender-separated education in our country today.

After examining how single-sex classrooms affected student achievement and growth in mathematics, language classes, and science, student engagement and motivation for learning, and comparisons to coeducational classroom settings, what does the research say about benefits to single-sex classrooms in the subject of music education? While the same benefits evidenced by prior research regarding single-sex classrooms hold the same advantages to the area of music education, music educators are face with additional factors influencing curriculum, instruction, and classroom management concerns. Specifically in vocal music, the issues of extremely large class sizes, adolescent physiological aspects, and various student demographics assembled in one classroom, can create tension and confusion when working with specific musical ensembles. With most males (and many females) enduring a voice change during their adolescent and teenage years, an aspect that would not concern educators in other subject

areas, it would be beneficial to have the opportunity to work with males and females separate to be able to focus upon, and support individually, such an uncomfortable, yet undeniable, physical and emotional metamorphosis. In the journal, *Where's the Evidence? Finding Support for Separating Middle and Junior High School Choirs by Gender*, author Michael Zemek (2010) states, "Many young male singers need their teacher's support and advice on proper techniques and repertoire, allowing them to feel more comfortable and therefore continuing to sing" (p. 16). Although females do encounter voice changes, the event is not as drastic or immediate, allowing for easy-adjustment or the occurrence being practically unnoticeable.

Along with the physical differences of male and female singers, participation and retention have become a crucial component to maintaining or building music programs and avoiding program budget cuts. If district administrators or school boards notice a low desire for participation in co-curricular or extra-curricular activities, they may find an easy opportunity to cut funding for such programs. Recruitment and retention, especially of males, is pivotal in conserving funding, maintaining employment opportunities, and providing students with the lifelong memories and skills available within a substantial musical education. As a generalized statement, more females are involved in choral classes than males. There are obviously variables to this statement, but according to a study from 2014 which summarized 10 separate national High School Transcript Studies, there were approximately 70% females compared to 30% males whom participated in choral music ensembles (Jacobs, 2014). These percentages appear to remain similar today, which is cause for reaction in encouraging males to participate in choral music while in school. Many factors such as "family influence, peer pressure, gender

stereotypes, adolescent voice change, or that the students' schedules were too busy for choir" are all viable reasons for this lack of participation (Zemek, 2010, p. 16). Lastly, Zemek (2010) lists teacher likability and personality, opportunities of choral music offerings that fit in students' schedules, and gender biases in choral literature and mainstream music entertainment, as other factors in lower participation in choral ensembles or lack of motivation to retain interest in the subject area. These statistics and specific justifications do not apply to males exclusively, but the research shows that females are continually steady in their participation in choral music and the Fine Arts in general.

With the data, statistics, and knowledge of the unevenness of student participation, physiological differences, and teacher uneasiness, it would be worthwhile to explore options that would hope to overcome such hurdles. A look into gender-separated music classes could be a beneficial option where each concern could be focused upon in a more individualized basis than in the traditional coeducational choral music classroom. Author Michael Zemek (2010) referenced a study by Jorgensen and Pfeiler (2010), in which they have reported upon a school that implemented gender-specific choral ensembles at the secondary level. They found that the benefits for both male and female students have outweighed any opposition in favor of the separation. These specific benefits include "individualized attention to the adolescent voice change, improved class dynamic and individual attitudes toward singing, decreased reliance on gender stereotypes, and increased enrollment, especially of male singers" (Zemek, 2010, p. 18). The studies and outcomes regarding single-sex or gender-separated choral music ensembles are scarce, but if music educators become advocates for their own practice and of service to their

students, more will become engaged and encouraged to participate in innovative options and opportunities for students to reach their full potential.

## Conclusion

In conclusion, according to research studies, there are definitely benefits to single-sex classrooms conducted in various subject areas, involving differing student demographics, and in multiple areas of the world. Not only have these studies shown maximized student achievement, but also an increase in engagement, motivation, personal outlook on education, and valuable teaching experiences for participating teachers. The continuation and expansion of studies related to gender-separation in classroom settings is crucial to understanding how students learn best, and how educators can teach best. Throughout the studies presented in this literature review, the subject areas of math, science, language class, and music education revealed the value of higher results when single-gender classrooms were implemented. Since 2002, the United States educational system allowed more exploration into single-sex classrooms. Now is the time for researchers and other educational stakeholders to take advantage of such allowances to find out what will benefit all our students and their overall learning. Additionally, new studies should be supported both financially and professionally in other subject areas to understand if gender-separation could positively affect student achievement across all content areas. In the specific area of music education, additional extensive and thorough research needs to be supported and performed to gain the knowledge of how students in music classrooms can learn the most effectively. With physiological changes affecting students' musical skills, which occur during their teenage years, music educators need to have the understanding, knowledge, and resources to

provide the best opportunities for their students to receive a rich and extensive musical education and overall experience.

There were scarce occurrences in the discussed studies that found minimal or no change in student achievement in single-sex versus coeducational classroom settings. However, the majority of results did present higher student achievement in gender-separated classes. Student learning should be the focus and priority of every educational system, and conducting or supporting research to gain the knowledge of increased student achievement is a critical element in creating a positive academic culture. If the United States educational structure yearns to regain international regard within its educational system, all realms of possibilities should be studied and explored with consistency and passion.

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