

Single-Sex Impacts on Male Secondary Education

Lakia Jones
Prairie View A&M University
Prairie View, Texas

ABSTRACT

In realization of the differences that boys experience, learn, and behave differently in a classroom environment, more effective strategies should be implemented in efforts to provide a better educational structure for both sexes. The purpose of this study is to investigate the impact of single-sex secondary school environments in males' attitudes, achievements, and learning abilities versus coeducational classroom settings.

Introduction

One of the growing concerns of educators and parents alike is the decline in academic achievement (as measured by standardized tests) for males in secondary schools. In coeducational settings, girls appear to have more success in learning and assessment. Studies have indicated that there is a significant drop in academic achievement for both sexes at the middle school level (Sadker & Sadker, 1994; Sommers, 2001; Funk, 2004; Lipsitz, 2000). Other studies have also shown that there is a substantial achievement gap between males and females.

Results for the 1998 writing portion of the National Assessment of Educational Progress indicated that at grades 4, 8, and 12, girls had a 16- to 20-point advantage over boys. In 2002, the same test showed that girls' advantage had grown to 17 to 24 points. On the reading test, 27 percent of 8th grade boys were proficient, as compared to girls ranking at 38 percent. Also in 2002, 44 percent of 12th grade girls reached reading proficiency; same grade level boys ranked at 28 percent proficiency (National Assessment of Educational Progress [NAEP], 2006).

The question that seems to plague many is not the learning advantage girls are having when compared to their male counterparts, but rather: why are boys not learning?

James (2007) asserted, “Boys who are not succeeding in an educational setting are not necessarily unable to learn, but it is likely that they learn in very different ways that those for which classrooms are now structured” (p. 5). James also suggested that specific factors such as stereotyping, peer pressure, social expectations, and environmental influences from families, peers, and teachers, as well as the media and entertainment industry, could be intensifying affects of boys’ learning in a coeducational environment (2007). The seemingly reasonable solution to this issue of learning deficits has become single-sex schools. Particularly in secondary school environments, having single-sex classrooms may add to the academic effectiveness of the class as opposed to coeducational settings and the deterrents that they may include.

In addition to academic differentiations between single-sex environments and coeducational settings, behavioral differences also become more predominant factors in the educational process. Boys are more likely than girls to seek special needs services (for learning and behavior disorders), and are more likely to receive principal referrals for discipline violations (Gurian, 1996; United States Department of Education, 2004; Sax, 2005). Over the past decade, data collection on single-sex schools has been for the benefit for females, with very little research dedicated to studying the effects for males (Gurian, 1996). However, there has been more recent studies that address male achievement as a result of matriculating data indicating academic failure for boys (Salomone, 2003; Australian Council for Educational Research (ACER), 2001; Martin, 2002).

Statement of the Problem

Research suggests that middle school boys experience, experience, learn, and behave differently (Sax, 2005). In realization to these differences, more effective strategies should be implemented in efforts to provide a better educational structure for both sexes. The purpose of this study is to investigate the impact of single-sex secondary school environments in males’ attitudes, achievements, and learning abilities versus coeducational classroom settings. There is also a need to identify the correlation between these factors in the specific academic levels of secondary schooling. Research in the area of single-sex education can address the learning deficits of males and females in the middle school years as well as target methods to improve instruction, overall attitudes towards learning and academic achievement.

Review of Related Literature

The single-sex school initiative was established in efforts to reinforce traditional gender roles and additionally “level the playing field” in student academic achievement. In 1986, Lee and Bryk conducted research to study single-sex and coeducational schooling in correlation with the National Center for Educational Statistics released *High School and Beyond* (a nationally representative longitudinal study of US high schools and their students) and randomly sampled 1087 students from 45 single-sex schools and 30

coeducational schools. Students were in their sophomore year of school in 1980, but researchers tracked the students' progress until their senior year in 1982 by using performance assessments. Quantitative research concluded that compared to peers in coeducational settings, boys in single-sex schools achieved higher scores in reading, mathematics, and writing during their sophomore year, and in mathematics for their senior year (Lee & Bryk, 1986). Additionally, enrollment for mathematics and physical science courses increased. This research holds importance because it demonstrates the need for single-sex education in secondary schools as a means for continuing excellence in academia and increased attitudes in achievement.

However, in England, there was growing concern regarding the underachievement or low academic leveling of males in secondary schools. As a result, Warrington and Younger (2001) reviewed the potential of single-sex classes as a way to improve student performance and increase overall attitudes towards learning. Researchers examined the rationale for implementing single-sex teaching, curriculum considerations, and discussed the potential strengths and weaknesses from all areas of the student, teacher and parents. The findings of this study reflected that both boys and girls felt advantages to single-sex schooling. Additionally, the perspectives of the parents were similar to those of the students. The teachers, however, felt that the research had left the males with little to no change, whereas the females of the study benefited greatly. The emergence of positivity sparked suggestions from other countries to begin voluntarily implementing a single-sex education option as opposed to only providing coeducational facilities.

A later study conducted in 2003 investigated the attitudes and achievement of Bruneian ninth grade students in single-sex schools in comparison to coeducational settings as a result of the government's decision to create a balanced educational system. Dhindsa and Chung aimed to compare the two school settings and measure their attitudes (enjoyment, anxiety, importance, interest, motivation, and confidence factors) and achievement (according to a standardized testing measure). More specifically, the researchers wanted to determine: "if the attitudes towards science of male students in single-sex schools differed from students in coeducational settings; and if the achievements in science for male students in single-sex schools differed from students in coeducational settings" (Dhindsa & Chung, 2003, p. 909). In conducting this research, 612 students (both sexes) were randomly sampled from four schools; two single-sex environments and two coeducational schools. The majority of the students were 14 years of age and all students had been taught the same science curriculum at the primary and secondary levels. The Likert-type questionnaire administered concluded that students demonstrated increased attitudes in science in when a single-sex environment. "The scale item mean scores for male and female students from single-sex schools were significantly higher on 8 out of 12 attitudinal construct combinations than for the students from coeducational schools" (Dhindsa & Chung, 2003, p. 913). Other results demonstrated that science achievements of male students in single-sex schools were moderately better than that of students in coeducational settings (Dhindsa & Chung, 2003). This study proved to be beneficial to current research efforts because it provides evidence that more definitive success in a single-sex school is highly possible, given the right attitudes for learning.

Facing the same challenges as England with male students, an Australian study later conducted by Mulholland, Hansen, and Kaminski (2004) took a deeper look into the

question of whether single-gender classrooms inside of coeducational settings address boys' underachievement. This study emerged as an investigation into the discovery of gender differences in the classroom and furthermore examined students' academic performance. The data for this study was collected using standardized tests for English and Mathematics, school subject results in accelerated Mathematics and English, and semi-structured interviews with teachers who had agreed to teach in single-gender classrooms. Results indicated that no significant differences in mathematics achievement attributed to genders, but scores in English improved for both sexes and improvement for females in the educational setting were significantly better. As it seemed, single-sex environments gave more academic concentration to English, Mathematics, and Science subjects and males were greatly benefiting from this instruction, as proven through assessments.

A later study conducted in England by Malacova (2007) questioned if students in single-sex schools make better progress at General Certificate of Secondary Education (GCSE) than those in coeducational settings and if the impact of single-sex schooling is different in a selective or non-selective environment. The GCSE is a public examination taken by secondary students at the end of their eleventh grade year for every subject. After diligent research and performance assessment tracking, findings concluded that single-sex schools were more effective than coeducational schools in promoting students' learning and development from ages 14-16 (Malacova, 2007). The findings further demonstrate that lowest progress reflected boys in coeducational grammar schools.

Under question, a huge factor that can be targeting the outcomes of assessment and attitudes is the relevancy of teacher pedagogy modifications in single-sex environments. One study conducted by Martino, Mills, and Lingard (2005) in Australia interrogated the impact and curricular needs of an all-male environment. Research concluded that "teachers had a tendency to modify their pedagogical practices and the curriculum to suit stereotypical constructions about boys' and girls' supposed oppositional orientations to learning" (Martino, Mills, & Lingard, 2005, p. 237). Researchers added that any educational program and its implementation designed to address the educational needs of boys must be able to address the issue of teacher knowledge within the context of a model of pedagogies that is intellectually challenging, connected to the students' worlds, is conducted within a supportive framework and is cognizant of differences among boys and girls as well as between girls and boys (Martino, Mills, & Lingard, 2005).

Later discovered, Mills, Martino, and Lingard (2007) investigated the proper pedagogical strategies needed to teach boys. As a response to the Australian Government's Parliamentary Inquiry Report, the authors wanted to pinpoint and identify strategies that had proven to be successful for creating a "boy friendly" curricula. The following claims were made as it pertains to teaching boys: "(1) boys tend to need more explicit teaching than girls and tend to prefer active, hands-on methods of instruction; (2) structured programs are better for boys because they need to know what is expected and they like to be shown the steps along the way to achieve success; (3) while girls more readily respond to content, boys respond more to their relationships with teachers; (4) activities help boys establish rapport with their teachers; and (5) boys respond better to

teachers who are attuned to boys' sense of justice and fairness and who are consistent in the application of rules" (Mills, Martino, & Lingard, 2007, p. 14).

Statement of the Hypothesis

The academic rigor for students is on a continual increase as states mandate testing procedures as an exit level requirement for graduation. Previous research has indicated that there is a need to integrate more immediate and concentrated academic approaches in efforts to target the success of male secondary students. Therefore, it is hypothesized that the mathematics and reading academic achievement and attitudes of middle school males in single-sex environments is significantly higher than the mathematics and reading academic achievement and attitudes of those males who are in a coeducational setting.

Method

Participants

Participants for this study will be 6th grade male students from a single-sex middle school and 6th grade male students from a coeducational school, both located in Houston, TX. Thirty students from each school will be selected on a random basis, but must meet the criteria of passing the Texas Assessment of Knowledge and Skills (TAKS) and the Stanford Ten Test.

The single-sex school has approximately 200 students enrolled, whereas 90 percent of whom are on free or reduced lunch and ethnic population percentages are as follows: 78 percent African American, 18 percent Hispanic/Latino, and 4 percent Caucasian/White. There is a total of sixty students enrolled in the 6th grade. The coeducational school represents a population of approximately 400 students, whereas 85 percent of the students receive free or reduced lunch and ethnic population percentages reflect 68 percent African American, 26 percent Hispanic/Latino, and 6 percent Caucasian/White. There is a total of ninety-five students enrolled in the 6th grade.

Students will be selected with the consent of parents, administrators, and teachers. Investigations will be conducted in the subject areas of mathematics and reading in 6th grade classes.

Instruments

Comparing pre and post achievement scores through the Star Mathematics and Star Reading Assessments will measure the effectiveness of instruction during the beginning and end of the academic year. The Star Reading and Star Mathematics Assessment is a software program that will indicate student skill level as well as determine areas of strengths and weaknesses.

Standardized test scores for the Texas Assessment of Knowledge and Skills (TAKS) will also be an indicative factor to determine student success. Attendance rates for the duration of the research and student's discipline reports will be documented for comparison of schools. School climate surveys will be utilized to measure attitudes and perceptions about learning for the students as well as semi-structured interviews conducted with teachers and students. Teachers will also document off-task behavior and classroom observations for the subject areas.

Design

For this causal-comparative study, there will be thirty students from each school to pre- and post test the Star Reading and Star Math Assessment, complete the Stanford Ten assessment, and complete the TAKS Reading and Mathematics test to indicate results of the study. The duration of the study will be one academic school year. A series of interviews to establish longitudinal data with the administrators, teachers, students, and parents will be conducted to ensure the effectiveness of the design. In order to measure the attitudes of students in single-sex and coeducational schools, students will surveyed by questionnaire about the learning atmosphere, their own behavior, quality of work, willingness to participate in various activities, preferred learning styles and teacher's teaching strategies.

Procedure

At the beginning of the school year, thirty students from both schools will be pretested using the Star Reading and Star Math assessments as indicators of progress. Students from the single-sex school will be divided into two groups of fifteen and will receive instruction from the same Mathematics and Reading teacher. Students from the coeducational school will be divided into four classes, but will be integrated with female students in the classroom. The classes will have additional support installed by having a teacher aide/assistant in the classroom. Both schools will use curriculum constructed from that specified school district and will heavily align with Texas Essentials of Knowledge and Skills (TEKS) objectives.

During the school year, both classrooms will have the freedom to develop instruction that will best serve the needs of the student; however, progress monitoring will be conducted on a quarterly basis to determine its effectiveness. Additionally, student and teacher interviews will be regimented during the study. Participants will receive instruction and be assigned class work accordingly and measured and assessed only during designated times stipulated in the study. The students will conduct surveys quarterly to measure their attitudes toward academic achievement and willingness to participate in academic exercises. The results for the two schools will be compared statistically.

References

- Ascher, C. (1992). School programs for African American males and females. *Phi Delta Kappa*, 73(10), 779 – 791.
- Australian Council for Educational Research (2001). *Academic performance of students at single-sex and coeducational school*. Retrieved from <http://www.acer.edu.au/>
- Dhindsa, S.H., & Chung, G. (2003). Attitudes and achievement of Bruneian science students. *International Journal of Science Education*, 25(8), 907-922.
- Funk, J. (2004). Middle school middling scores. *The Wichita Eagle*. Retrieved from <http://www.kansas.com/mid/eagle/news/local/7781902.html>
- Gurian, M. (1996). *The wonder of boys: What parents, mentors, and educators can do to raise boys into exceptional men*. New York, New York: Tarcher/Putnam.
- Lee, V.E., & Bryk, A.S. (1986). The effects of single-sex secondary schools on student achievement and attitudes. *Journal of Educational Psychology*, 78, 381-395.
- James, A.N. (2007). *Teaching the male brain: How boys think, feel, and learn in school*. Thousand Oaks, CA: Corwin Press.
- Lipsitz, J. (2000). *Growing up forgotten*. New Brunswick, NJ: Transaction Books.
- Malacova, E. (2007). Effect of single-sex education on progress in GCSE. *Oxford Review of Education*, 33(2), 233-259.
- Martin, A. (2002). *Improving the educational outcomes of boys*. Final report to ACT Department of Education, Youth, and Family Services.
- Martino, W., Mills, M., & Lingard, B. (2005). Interrogating single-sex classes as a strategy for addressing boys' educational and social needs. *Oxford Review of Education*, 31(2), 237 -254.
- Mills, M., Martino, W., & Lingard, B. (2007). Getting boys' education right: The Australian Government's Parliamentary Report as an exemplary instance of recuperative masculinity politics. *British Journal of Sociology of Education*, 28(1), 5-21.
- Mulholland, J., Hansen, P, & Kaminski, E. (2004). Do single-gender classrooms in coeducational settings address boys' underachievement? An Australian study. *Educational Studies*,30(1), 19-32.
- National Assessment of Educational Progress. (2006). *Long term trend assessment in reading and writing, 2002: Major results*. Retrieved from <http://nces.ed.gov/nationsreportcard>
- Sadker, M., & Sadker, D. (1994). *Failing at fairness: How our schools cheat girls*. New York, New York: Touchstone.
- Salomone, R.C. (2003). *Same, different, equal: rethinking single-sex schooling*. London, England: Yale University Press.
- Sax, L. (2005). *Why gender matters: What parents and teachers need to know about the emerging science of sex*. New York, New York: Doubleday.
- Sommers, C. H. (2001). Give same-sex school a chance. *Education Week*, 26(4).
- Tsai, M. (2002). Do male students often perform better than female students when learning computers?: A study of Taiwanese eighth graders' computer education through strategic and cooperative learning. *Journal of Computing Research*, 26(1), 67-85.

United States Department of Education (2004). *National Center for Education Statistics, Projection of Education Statistics to 2011, Earned Degrees Conferred*. Retrieved from <http://nces.ed.gov/pubs2004/proj01/chapter4.asp>

Warrington, M., & Younger, M. (2001). Single-sex classes and equal opportunities for girls and boys: Perspectives through time from a mixed comprehensive school in England. *Oxford Review of Education*, 27(3), 339-356.

About the Author

Lakia Jones has been an English Language Arts and Reading Educator for three years and currently works as a Curriculum Director in the HISD Alternative District. She received her B.A. in Communications from Texas Southern University and continued to pursue her M.Ed. in Curriculum & Instruction from Prairie View A&M University. She plans to continue her research about single-sex educational environments at Texas A&M University's Urban Education Department.