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The Gender Gap: How Utilization of a School Counseling Center Affects Academic Performance

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Running head: GENDER GAP

The Gender Gap: How Utilization of a School
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Abstract

In researching the current academic gender gap, the project investigated academic performance, gender, and utilization of the counseling center to determine whether there was a relationship. The variables that were appraised are as follows: frequency use of the counseling center, type of counseling center use, stress, organizational skills, homework completion, retention, and grade point average. The data was collected using a survey method at a rural middle/high school. Some of the results mirrored prior research and some countered it. The results regarding stress indicated that males experienced more stress related to school than females. With regards to the organization and homework, they indicated that females ranked themselves with a higher completion rate and better organizational skills. The discussion focused on the long term affect of the gender gap, its implications, the benefits of eliminating it, and the significance of the counseling center in that process.

The Gender Gap: How Utilization of a School
Counseling Center Affects Academic Performance

Obtaining an education is a mutually beneficial task. It is beneficial to the individual and the society. When a group or sub group of the population is not achieving in the education system the ramifications can be felt throughout the society. According to Draves (2002), there is an academic performance gap between males and females. The data presented by Draves and Coates (2006), indicated that females are achieving higher grades than their male counterparts and there are fewer males obtaining college degrees. According to Gurian and Stevens (2005), for the first time in history males make up less than forty-four percent of students in many colleges. This trend has brought about a change in the gender gap. The original focus and concern about under performance in the education system has been on girls (American Association of University Women 1992). The effort focused on obtaining their gender equity, but during the last couple of decades the gender gap pendulum has now swung the other way. The current focus is on the underperformance of males in the education system.

The project will investigate the relationship between academic performance, gender and utilization of the counseling center at a rural middle school and high school. The project was conducted with the assumption that females utilize the counseling center with greater frequency which positively affects their academic performance when compared to their male counterparts. The project is intended to help find one or more correlations that may affect the current gender gap.

Review of the Literature

A comprehensive review of the literature on the gender gap below includes literature from the popular media, academic journals, websites and books. Some of the fields that are represented are education, psychology, economics and sociology. The section is broken down into sub-topics which are addressed in the following ways: 1) media, 2) gender gap history, 3) stress and self-beliefs, 4) academic self view, 5) self-discipline, 6) retention, 7) socio-economic status, 8) academic red-shirting, 9) teacher rating/parent belief, 10) gender differences (neurological), 11) same-sex classrooms, 12) research from Britain and 13) college enrollment. The method, results, and discussion sections will follow in order. It is the researcher's goal to broaden the knowledge of the readers on the academic gender gap and to bring some insight to one of the possible correlations.

Media

The gender gap has been an issue that brings about heated debate. But the debate has not received much public attention in the United States. According to Conlin (2003), Britain and other countries focus more on the gender gap issue. See "Research in Britain" below. The lack of public outcry in the United States has not harnessed the full power of the media to affect policy, particularly in favor of males. Since the 1970's, there have been many conversations and reports in regards to female academic performance and progress. This has not held true for males. As reported by CBS News (2003), girls have received years of special popular and policy attention which has increased their performance while the performance of boys has been stagnant. Boys are asked to perform tasks that go against preference for active learning. Conlin (2003)

stated that boys' behavior such as their physical play, energy, inattention, and active classroom presence has been seen as inappropriate, and can lead to negative consequences at a young age. It may be easier for girls to sit still for longer periods of time, thus the consequences are not incurred to the same extent as they are for boys. According to Conlin (2003), when boys exhibit this behavior they are four times more likely to be diagnosed with attention deficit hyperactivity disorder which, often leads to special education diagnosis and mood altering medication. This energy and physical play is developmentally appropriate for boys, but it is not tolerated in schools.

In the media there are many opinions about the cause of the gender gap. The media has reported that feminists, absent fathers, grading bias, and the teaching profession dominated by females have all contributed to or caused the current gender gap (CBS News, 2003; Snyder, 2007). CBS News interviewed people from different organizations with different opinions. For example, they interviewed Christina Hoff Sommers from the American Enterprise Institute and she directed a majority of the blame on feminists and organizations such as the American Association of University of Women. School psychologist Michael Thompson stated that he believes absent fathers' play a role and that lack of role models for young men has contributed to the gender gap (CBS News, 2003). For educators and the public it will be important to focus on the research and steer clear of opinions that are not supported by data. The gender gap is an important issue that needs to be addressed. If not properly addressed the gender gap could have a lasting negative impact on society. It is imperative that society work together to keep the gender gap pendulum from swinging toward either extreme.

Gender Gap History

To fully understand the current situation of the educational system it is important to review the history of the gender gap issue. According to Gurian and Stevens (2005), the shift in education during the industrial revolution to a more structured one-room schoolhouse eventually led to the current gender gap. Gurian and Stevens (2005) stated that the new style of learning that was developed did not take advantage of male strengths. Throughout history a large majority of individuals were educated by families, mentors apprenticeship, and through hands-on-work (Gurian & Stevens, 2005). These historical methods took advantage of male strengths, such as physical and experiential learning that focused on hands-on experience. During the industrial revolution education shifted away from families and hands-on-learning to a style that was very structured. The goal was to develop a workforce that would staff the growing factories and other industrial jobs that originated during the time period. The structure was developed to help adjust students to the realities of the factory and industrial life. Students learned to follow a schedule by a bell and spend long periods of time in stationary fashion working on tasks. Because this learning structure was difficult for males in school, many were unsuccessful and ironically, dropped out to join the workforce (Draves & Coates, 2006; Gurian & Stevens, 2005). Although the intention of the structured school system was to develop efficient workers, a group of males bypassed the system and directly entered the workforce. One hundred years later history continues to repeat itself in the modern internet age with males lagging behind once again. For the last thirty years the focus in education has been on the performance of girls and their experience in school.

In the 1970's the gender gap was skewed in favor of males, with females performing at a lower level. During this time males were more successful, which led to more males attending institutions of higher education (American Association of University Women, 1992; Riordan, 2003). According to Riordan (2003), in the 1970's males outnumbered females in higher education by a ratio of 59:41. The gap was closed by 1980, with the ratio reaching 50:50. This rapid closure of the gender gap was the result of a major effort to bring about equity to our school system (Riordan, 2003; Conlin, 2003).

Prior to the 1970's there was some interest in the possibility that females were outperforming males on verbal measures, at the same time males were outperforming females on the verbal section of the Scholastic Achievement Test (SAT). (American Association of University Women, 1992; Brophy, 1985; Entwisle, Alexander & Olson, 1997) This disparity helped mask the lower performance of males on written and verbal exercises and this brief concern regarding male performance was surpassed by the initiative to boost female performance and reach gender equity. According to Pomerantz, Altermatt, and Saxon (2002), by the 1970s the attention had transitioned to focus on the possibility that males were outperforming females in math and science.

Beginning in the 1970s there was an increased focus on females' experience in school and what potential risk they may encounter with regards to their academic performance (e.g., American Association of University Women, 1992; Sadker & Sadker, 1994; Orenstein, 1994; Wiens, 2005). In 1972 with the passage of Title IX there was an amplified focus on obtaining equity in education. The amendment made discrimination on the basis of sex illegal in any educational program receiving federal funding

(American Association of University Women, 1992). According to Wiens (2005), throughout the last thirty years researchers have focused on countless issues affecting the self-esteem and learning of females in the education system. Roirdan (2003) stated that the nationwide effort to increase female performance in education was relatively effective, but in its wake we now need to re-evaluate males' academic performance that seemed for the time to be put aside.

According to Riordan (2003), starting in the 1990s there was data that indicated that the gender gap favoring males was declining and equity in college attendance was already passed with the gap now affecting males. Wiens (2005) stated that in 1997 fifty-five percent of all undergraduates were female. Riordan (2003), stated that the gender-equity policies of the past thirty years have been successful in boosting female performance and now there is a need to study and implement methods in education to increase male academic performance.

Stress and Self Beliefs

In today's education systems students experience stress of all kinds, this stress has a varying degree of impact on students' performance. The stress that students experience can either be motivating or hindering. According to Pomerantz et al., (2002); Altermatt and Kim, (2004), girls experience more internal distress than boys, at the same time they perform better academically than boys. Pomerantz et al., (2002); Eccles, Wigfield, and Schiefele (1998), suggested that the distress girls experience comes from greater concern about some of their beliefs and desires regarding school. Pomerantz et al., (2002) stated that girls concerns may stem from a greater tendency or desire to please adults such as teachers and parents. This concern may impact their performance and according to

Pomerantz et al., (2002) this may increase their effort to perform academically. This lack of concern by boys regarding pleasing adults may impact their academic performance and may contribute to the performance gap. The internal stress that girls experience may act as an internal motivator. In contrast boys tend to externalize their symptoms and act out. According to Eccles et al., (1998) girls also tend to underestimate their potential when compared to boys. This belief by girls that they may not be as good as boys may also combine with their internal stress and act as motivation. These two factors may have a potential to contribute to the performance gap.

Pomerantz et al., (2002) suggested that another factor may be how differently boys and girls view academic feedback such as grades. Girls view the grade they received as feedback on their ability, while boys tend to view the grade as having limited information about their performance. This approach or view by boys allows them to refute the grade as a value on their performance. Pomerantz et al., (2002) states that this approach disparity with regards to grades by girls and boys contributes to the performance gap, the fact that girls view grades as more evaluative increases their performance along with their desire to please adults. Boys on the other hand may not possess these internal motivators which may negatively affect their academic performance. Even though girls experience more stress and under evaluate themselves boys are more likely to be referred for by their teachers due to motivational problems (Eccles et al, 1998; Altermatt & Kim, (2004).

The current research is interested in this greater internal distress that girls experience and will be looking to see if girls utilize the counseling center with greater frequency to help cope with this distress.

Academic Self View

How does self-view or identification of self with certain subjects, affect the future goals or academic performance of males and females? Lips (2004) examined how males and females rated their current self-view and future self-view with regard to different subjects. Lips (2004) looked at different structures, one being the power composite, which contained stereotypical male dominated subjects such as math, science and business. Lips (2004) also examined what was deemed as the people composite, which contained more stereotypical female dominated areas such as humanities, fine arts, and education. The results from this study showed that there is a divergence between the current self-view and future self-view. Females' self-views changed from high school to university and that shift may limit their possibilities for the future. As women make the transition from high school to university they seem to identify themselves more with the stereotypical people composite. This may help explain the lack of females' participation in certain majors in college. According to Freeman (2004), females now earn more than half of all bachelors and masters degrees, but they are still under represented in male dominated majors such as computer science and engineering. Lips (2004) reported that men and women still exhibit choices that fall in gender lines. Men reported or identified with the power composite and woman identified with the people composite. How does this affect the academic gender gap and how does this relate to males falling behind in school? According to Freeman (2005), females continue to outperform males in reading and writing and the gap with math and science has closed. Even as females self-view failure to line up with the power composite, the national education statistics continue to demonstrate their improvement in performance with math and science (Freeman, 2005).

Even with this improvement it is still important to note that females are still underrepresented in careers that utilize math and science even though their academic performance has increased in these areas (Freeman, 2005; Lips, 2004). According to Lips (2004), women in high school who identify with the power composite diverge from that view when they reach college. Females may be closing off choices even though they have demonstrated the ability to perform in the power composite areas. So as research attempts to boost male performance there still needs to be a concerted effort with females to make sure they do not fall by the wayside (Pomerantz et al., 2002).

Research conducted by Kimmelmeier and Oyserman (2001) looked at downward social comparison, cultural assumptions, self-concept and its affect on males and females self-confidence in academic performance. How do males and females compare themselves to others who received a negative academic result? Kimmelmeier and Oyserman (2001) researched how males and females reacted when they were subjected to an academic comparison. They compared the individuals in the study to similar and dissimilar subjects. The research also examined whether males and females were affected differently depending on their comfort level with the academic area that was presented. Kimmelmeier and Oyserman (2001) found that females were more inclined to associate to a subject who received a negative evaluation when they were of the same gender and this in turn affected their self-confidence. Females were more affected by this social comparison than the males. Kimmelmeier and Oyserman (2001) found that females and males differ when they shield the self from negative downward social comparison and this leaves females at a disadvantage in today's society.

The importance here ties in with the earlier section on stress and self-beliefs. This research by Kemmelemeier and Oyserman (2001) demonstrated that females are more susceptible to social comparisons. Pomerantz et al., (2002), suggested that the distress girls experience comes from greater concern about some of their beliefs and desires regarding school. Even though females are more affected by comparison and internal distress they have been performing at a higher level than their male counterparts (Kemmelemeier & Oyserman, 2001; Pomerantz et al., 2002). According to Greene and Greene (2004) females are outperforming males and make up a disproportionate number of the national honor society and the top of the class.

Self-Discipline

What is the current academic gender gap between males and females and what role does self-discipline play in creating that gap? Females receive better grades than males throughout their school careers and in a variety of subjects such as ELA, Math, Social Studies and Science (American Association of University women Educational Foundation [AAUWEF], 1998; Draves & Coates, 2006; Duckworth & Seligman, 2006; Perkins, Kleiner, Roe & Brown 2004; Pomerantz et al., 2002; Sadker & Zittleman 2005). Perkins et al., (2004) also found that female graduates in 2000 earned an overall mean GPA of 3.05, while male graduates earned an overall mean GPA of 2.83. Perkins et al., (2004) also found that in 2000 high school graduates included more female graduates (52.3 percent) than male graduates (47.5 percent). Draves and Coates (2006) stated that boys earned lower GPA's than girls and made up a diminished percentage of the college population.

Grades are an important part of school and they have an impact on the choices that students have with regards to life after public school. That fact makes gender grade parity a crucial goal. Better school performance would provide males with more life choices.

Why do girls get better grades than boys? According to Duckworth and Seligman (2006), females are more self-disciplined than males which translated or predicted their higher achievement scores. Ready, LoGrefo, Burkman and Lee (2005) found that girls in kindergarten entered and exited with stronger literacy skills than boys. Ready et al., (2005) also found that girls learning approach played an important role in this gap. According to Ready et al., (2005) and Brophy (1985), girls tended to have a learning approach that more frequently included attentiveness, organizational skills and on task performance. Duckworth and Seligman (2006) used the terms self-discipline and self control synonymously.

Duckworth and Seligman (2006) defined *self-discipline* and *self-control* both as the ability to suppress prepotent responses in the service of a higher goal and further specifying that such a choice is not automatic but rather requires conscious effort. Examples of self-discipline include deliberately modulating one's anger rather than having a temper tantrum, reading test instructions before proceeding to the questions, paying attention to a teacher rather than daydreaming, saving money so that it can accumulate interest in the bank, choosing homework over TV and persisting on long-term assignments despite boredom and frustration. (p.4)

The examples of self-discipline go against the natural strength of boys. According to Gurian and Stevens (2005), boy energy is physical, kinesthetic, spatial and favors

learning through trial and error. This energy does not align with the definition of self-discipline. Girls are more inclined to exhibit the skill of self-discipline (Ready et al., (2005; Duckworth & Seligman, 2006). According to Ready et al., (2005), girls in kindergarten demonstrate positive social and academic behavior while boys more frequently display disruptive and unfocused behavior.

Duckworth and Seligman (2006) stated that self-discipline is a good predictor of GPA. GPA shows an extended effort that encompasses homework assignments, long-term assignments, and the ability to study and participate in class (Duckworth & Seligman, 2006). These tasks require a concerted effort over a long period of time. According to Draves and Coates (2006), the lack of homework completion by males contributes to the academic gender gap.

Individuals must be able to overcome boredom, fatigue, distractions and other challenges to obtain and maintain their GPA throughout the school year (Duckworth & Seligman, 2006). In light of the research on self-discipline, the current study had students rate their organizational skills and homework completion to look at the possibility of a correlation between gender, organization and academic performance.

Retention

In today's current education system males are retained at greater rates than females (Entwisle, et al., 1997; Entwisle, Alexander and Olson, 2007; Frey, 2005). Entwisle, et al., (2007), stated that boys have lower marks for classroom behavior than girls and the behavior marks for boys counted more in teachers' referral for retention. According to Jimerson, Carlson, Rotert, Egeland and Sroufe (1997), retention is a prevalent practice despite evidence which suggests there are no positive academic effects

and it may be harmful to students regarding their adjustment. According to Frey (2005), boys are retained at higher rates than girls. Boys are retained 24 % of the time and girls are retained 15% of the time. Jimerson, et al. (1997) conducted a longitudinal study that looked at different characteristics of retained students compared to promoted students who had low achievement. The purpose was to determine what differences existed in the students, to try and shed some light as to their reason for retention. The research demonstrated that the retained students exhibited more maladaptive behaviors, were less confident, and less engaging than the similar low achieving promoted students (Jimerson et al., 1997). The research conducted by Frey (2005) also examined retention. She looked at who was retained by ethnicity, gender, socio-economic status (SES), and parental factors. The results found that a larger portion of minority male students with a low SES were retained. Research has demonstrated that retention is one of the most powerful predictors of school dropout behavior (Jimerson, Anderson & Whipple, 2002). This research found that students who are retained in “one grade are forty to fifty percent more likely to dropout than promoted students and students who are retained in two grades are ninety percent more likely to dropout (Jimerson et al. 2002, p. 452).”

The current research examined the role retention contributes to the current gender gap by asking students to indicate on the survey if they had been retained.

Socio-Economic Status

Socio-economic status can affect where you go to school, what skills you bring to school, and what resources are available to you. According to Greene and Greene (2004), students from socially and economically disadvantaged families are more likely to attend rural and urban schools. These schools are also more likely to face the

challenge of meeting low SES student needs with limited budgets, facilities, and staff. Greene and Greene (2004) stated that these shortfalls affect a greater proportion of minorities. The years leading up to school attendance can be very important in terms of development and low SES families typically have fewer resources to offer their children. It can also affect how parents and teachers view a student's academic potential.

Research by Entwisle, et al., (2007) and Entwisle, et al., (1997) studied a group of students from an urban school district. They divided the students into two categories: those who received meal subsidies and those who did not. By taking this approach they were able to look at SES as a variable and found that students receiving meal subsidies fell in a low SES category. This study also looked at a number of other variables such as, parent ratings, teacher ratings, student behavior, and retention. They studied how these factors affected the reading test scores of the two groups of students. When students enter school, they have roughly equivalent reading scores, but over time a gap develops between male and females (Entwisle, et al., 2007; Freeman, 2005; Klecker, 2006; Ready et al., 2005). The research by Entwisle, et al., (2007) compared the data from the students' transition from their first school year to their fifth school year. They found that females' reading scores increased at a much greater level than male students for the group that received meal subsidies. For the group of students that did not receive a meal subsidy the male and female scores were similar. As stated earlier Entwisle, et al., (2007), researched four variables: parent rating, teacher rating, student behavior and retention. Entwisle, et al., studied how each of these variables affected the students' reading scores. For the parent rating variable the researchers found parents of the meal subsidy group held different beliefs than the non-subsidy group. This will be covered in greater detail in

the later section entitled Teacher Rating / Parent Belief. With regards to the student behavior variable, the teachers gave boys low marks for behavior which had a marked affect on their level of retention.

According to Entwisle, et al., (2007) it is the precursors of retention, like the poor reading marks and classroom behavior seen at the end of Year 2, that change the gender coefficient. Retention is not the root cause of the gender gap/ it is the lower reading and behavior marks of boys leading to retention that depress their test scores, not retention itself. Retention is an administrative response to unsatisfactory classroom performance. (p. 124)

While this is an important distinction to make and may shed some insight on methods of elevating the gender gap, it will be important to remember the data presented in the “Retention” sub-section and the negative impact it has on student performance.

Another study by Roderick (2003) researched African American Male adolescents in south side Chicago. This research focused on how the transition to high school affected students. When the GPAs’ were examined the results showed that males’ grades dropped significantly and had larger declines than females. Roderick (2003) looked at teacher ratings of males’ behavior which also declined from eighth grade to ninth grade. According to Roderick (2003), sixty percent of males in the sample had dropped out of school by the twelfth grade compared to only twenty percent of females. As stated earlier by Greene and Greene (2004), students from socially and economically disadvantaged families are more likely to attend rural and urban schools. According to Roderick (2003), the students experienced negative relationships with adults in school and the urban

schools were not equipped to help the students with their daily struggles. Males seemed to suffer greater deficits when compared to females.

SES affects the resources of students and also affects the skills they will bring to school. After analyzing the research it is clear that there are concrete steps that can be taken to assist students that come from a low socio-economic status.

Academic Red-shirting

What is academic “red-shirting” and is it helpful? According to Frey (2005); Oshima and Domaleski, (1999), and Katz, (2000), academic red-shirting is the practice of delaying entry into school. The term red-shirting was originally used in the college sports world and referred to the practice of delaying an athletes’ participation to increase their development. It now means the same thing in the education field and it is the practice where parents will hold their school age child out of school another year to provide them time to develop (Katz, 2000; Frey, 2005). According to Katz (2000), this practice is used with boys more frequently than with girls and it may be in response to the higher demands that students have to meet in kindergarten. Frey (2005) indicated this practice is used more commonly with affluent families. This may be due to the greater resources that these middle/upper class families have. They can more easily delay their child’s entry into school and absorb the extra child care cost.

According to Frey (2005), eleven percent of boys compared to six percent of girls have had delayed entry into to school. The parents reported the delay was due to either a late birthday or they felt their child was exhibiting behaviors that were less mature than other children of the same age. Frey (2005) also found that this occurred predominately with middle-class white families and stated that this trend has contributed to the increased

demand on kindergarten academics which may be affecting the classroom environment. Kindergarten was originally a place for socialization and play, but today there are far more academic requirements. According to Frey (2005) the presence of older or delayed students may be increasing this trend. This increased demand on students may only make it more difficult for boys to compete due to their delayed verbal and reading skills when compared to girls (Gurian & Stevens, 2005).

According to Katz (2000), the research on red-shirting has not provided a clear picture. There have been mixed results. Katz (2000) stated the results can vary depending on the age that is researched. When looking at the immediate effects Katz (2000) indicated there have been some academic and social improvements. At this same time there has been speculation that older students may feel isolated. When looking at the intermediate effects, the academic achievement is equal to their grade level peers however there is some evidence that some red-shirted students required greater use of special education services. Frey (2005) and Katz (2000) both concurred that the results of this practice need to be investigated to determine what if any long-term benefits occur. Due to the practices greater use with boys', it needs to be looked at in the context of the academic gender gap to determine if it has either helped or hurt the current state of boys' education.

Teacher Rating / Parent Belief

What role does the teacher and parent play with regard to the academic gender gap that currently affects males in today's education system? Teacher ratings and parent beliefs have an important role and can contribute to the gender gap. Studies by Dee,

(2007) and Entwisle et al., (2007) researched the importance of teacher rating, parent belief, gender, and how those variables affect student performance.

The research by Entwisle et al., (2007) which was also mentioned in the subsection, “Socio-economic status”, studied teacher behavior ratings and parent beliefs as part of their study. They found that teacher’s consistently rated boys’ behavior below that of girls, this reflects the differences in how the sexes behave in school and may stem from a teacher bias. According to Entwisle et al., (2007), when teachers favor one sex over the other they act in ways that encourage achievement by their favored sex. Brophy (1985) concluded that “teachers do not systematically discriminate against students of the opposite sex (p.137).” This would seem to indicate that the bias is unintentional and may be an aspect of the teachers’ gender. This will be discussed later in research by Dee (2007) who was interested in the affect of the teachers’ gender. Entwisle et al., (2007) found that this lower rating of boys occurred regardless of race and SES. This is important and indicated that boys are receiving these lower ratings across the board and their behavior is not seen as desirable by teachers.

Brophy (1985) suggested that the student role calls for a primarily passive, recipient learning style rather than a more active or exploratory one, and that teachers tend to prefer students they describe as quiet, mature, orderly, and conforming over students they describe as active, independent, or assertive. These desired attributes of students clearly overlap much more with the female than the male gender role as traditionally defined by our society; therefore girls should find it easier to adjust to this student role than boys and should be more motivated to do so. (p. 118)

Entwisle et al., (2007) also looked at parent belief as part of their study. They found that this varied with SES. The parents of students from families that had a low SES status believed that girls would score higher and their expectations were higher for girls. Entwisle et al., (2007) indicated that these expectations were a form of psychological support that favored girls.

As stated earlier, research by Dee (2007) was interested in the affect the gender of the teacher had on student performance. Research has argued that male and female teachers have biases with regards to boys and girls but they are not always intentional (Entwisle et al., 2007; Brophy, 1985). Dee (2007) was interested to determine if assignment to a same gender teacher influenced educational outcomes. This study used data from National Educational Study of 1998 (NELS:88) and the participants researched were eighth grade students. Dee (2007) found that gender interactions between teachers and students were statistically significant on test scores, teacher perception of student performance and student engagement with academic subjects. Dee (2007) also found that these were related to the subject specific gender gaps.

According to Dee (2007), this affect size implies that just one year with a male English teacher would eliminate nearly a third of the gender gap in reading and would do so by improving the performance of boys and simultaneously harming the performance of girls.

...For example, boys are approximately 11 percentage points more likely than girls to be seen as disruptive. However, the estimates presented here indicate that a year with a male teacher would close the gender gap in the probability of being seen as disruptive by half. (p. 550)

The results presented here by Dee (2007) are important and appear to play a large role in certain subject gender gaps. Dee (2007) was clear to state that it is not suggested that gender-based segregation of students and teachers take place, furthermore she indicated that these results should be used to push future research to learn more about student-teacher interactions.

Gender Differences (neurological)

Males and Females come to school with different strengths. According to Gurian and Stevens (2005), females come to school with a greater verbal ability than males. Males may come to school with a greater ability in math due to enhanced functioning in parts of the brain that deal with spatial reasoning (Altermatt & Kim, 2004). A contradictory finding by Entwisle et al., (2007) showed evidence that males and females come to school with the same reading ability and the gap develops over time. Wills, Kilpatrick and Hutton (2006) indicated that males and females develop in different time frames. The brains of males and females have differences and they have been documented using PET scans and MRIs (Gurian & Stevens 2005; Tyre, 2005). The male brain relies more on spatial-mechanical stimulation and responds well to pictures, illustrations and video games (Gurian & Stevens, 2005). According to Connell and Gusnzelmann (2004), males and females have strong right and left hemisphere abilities, girls have an advantage in the early years in speaking, reading, writing, empathy, feelings and expression of these feelings. As stated earlier males have an advantage in visual spatial and visual motor skills which help boys in areas such math and science (Connell, Gusnzelmann, 2004).

Warrick and Naglieri (1993) were interested in studying sex-related differences using a theoretical approach of neurological functioning. They used the PASS cognitive processing model which stands for planning, attention, simultaneous, successive. Warrick and Naglieri (1993) administered the PASS test to students in elementary school. They found that girls outperform boys in the area of attention and planning. Warrick and Naglieri (1993) indicated that these findings are important. If gender differences in attention are developmental then it may be important to look at whether professionals are misdiagnosing and medicating males at a greater rate for attention deficit hyperactivity disorder. Warrick and Naglieri (1993) stated that the differences in the planning variable may be due to the gender related differences on verbal tests. This has implications for instruction. According to Naglieri and Warrick (1993), training has shown to provide benefits and assistance in planning. They stated that the PASS model may be more beneficial at deducing gender differences than intelligence tests.

According to Cook, (2006); Gurian and King, (2006); Gurian and Stevens, (2005) and Wills et al., (2006) it is important to use a multitude of techniques when teaching so students can experience and learn in many different ways. Educators need to make an effort to recognize the differences in boys and girls and use gender specific techniques to help eliminate the academic gender gap and boost performance of males and females.

Same-Sex Classrooms

What are some solutions to the current academic gender gap? Boys are not performing at the same level as girls in the current education system and different ideas have been discussed to remedy the crisis. Same-sex classrooms are one option that has been studied as a possible solution (Black, 1998; Gurian & King, 2006; Mulholand,

Hansen & Kaminski, 2004; Sadker, 1999; Sather, 2002; Wills et al., 2006). Sather (2002) stated “the Bush administration seems to regard same-sex education as a cure-all for what ails the nation’s public schools.”(p.1) According to Sather (2002), supporters of same-sex education indicated it builds confidence and assisted students in focusing on their studies. But opponents indicated it will weaken Title IX and the research has not consistently shown same-sex classrooms provide a benefit for students (Black, 1998; Sather, 2002). Black (1998) argued there may be legal issues with regards to the Fourteenth Amendment and federal equal education laws. According to Sather (2002), the No Child Left Behind Act of 2002 authorized districts to use funds to launch same-sex classrooms. There seems to be a paucity of research on same-sex classrooms in the United States, but countries such as Great Britain and Australia have had some studies on them.

Wills et al., 2006 studied same-sex classrooms and were interested in social and academic outcomes. One of the arguments for a same-sex classroom is that gender learning differences do exist and males and females may benefit from specialized teaching. Gurian and King (2005) have reported that gendered teaching strategies can be very effective and help students obtain improved academic scores. Wills et al., 2006 investigated single gender classrooms in a coeducational government school. Their subjects were third and fourth grade students in same-sex classes, who sometimes came together as a coeducational class. They were from a mixed rural/urban community of modest socio-economic status (Wills et al., 2006). Wills et al., (2006) obtained their results using quantitative and qualitative methods. They utilized four measures; standardized test scores, observations, interviews, and surveys. This was done to obtain a

dynamic picture of the single gender class. A key component of the Wills et al., (2006) study was the development and use of productive social interactions as the basis for academic achievement. By taking this multi-pronged approach to study this process they learned or became aware of more information. Wills et al., results were interesting and should be meaning full to future studies of same-sex classrooms. Some of the different results indicated improvement in certain areas of behavior and motivation but there was a paradoxical effect and there was no improvement in academic performance (Wills et al., 2006).

According to Wills et al., (2006), Girls made considerable advances in the development of self-assurance and gained confidence to attempt new and demanding aspects of the curriculum. Boys made notable gains in their capacity for self-discipline and were motivated to engage enthusiastically with school work, and many developed a real commitment to participation in the school community. Teachers reported a high level of work satisfaction and expressed pleasure with the amount of time they now find themselves ‘on task’, ‘actually teaching’---rather than dealing with behavioral infringements and emotionally distressed children.(p. 288)

The single gendered environment allowed the teachers and students to experience different changes in their school culture. Wills et al., (2006) recognized their research had some limits and they recommended that in the future a longitudinal study may be more effective in determining if there are any academic benefits.

Another study also recognized the academic gender gap and researched single-gender classrooms in a coeducational setting as a method to boost males’ academic

achievement. It was conducted by Mulholland et al., (2004) and researched ninth grade students who participated in single-gender Math and English classes. The results of this study also found no significant academic improvement in scores. Mulholland et al., (2004) considered the brevity of the study as a possible reason for the limited improvement in scores. The results did show a small improvement in some areas and Mulholland et al., (2004) believed that this study can be used to show that there are opportunities where single-gendered classrooms may provide possibilities of enhanced academic achievement. Mulholland et al., (2004) also indicated that there may be benefits of using a coeducational setting and offering single-gendered classes but this will not be an immediate fix for the under performance of males.

Some other studies by Younger and Warrington, (2002); Martino and Meyenn, (2002) found that academic improvement may not come from the gendered composition of the classroom and may be the result of the pedagogical approaches that were utilized specifically for each gender which caused the academic improvement. As stated earlier Gurian and King (2005) reported that gendered teaching strategies can be very effective. More research needs to be conducted with the use of same-sex classrooms and different pedagogical approaches. There needs to be more research conducted in the United States to determine what national factors may also be in play with regards to the use of same-sex classrooms. The efforts to develop solutions to this international problem are important and the society as a whole will benefit from a reduced academic gender gap.

Research from Britain

As stated earlier in the sub-section “Media” there has been greater public attention in Britain given to the issue of the academic gender gap (Conlin, 2003; Henry, 2001;

North, 2005; Mansell, 2003). This greater public attention has led to more research in the area of the gender gap (Gorard, Rees, Salisbury, 2001; Jackson, 2002). There have been conflicting results with regards to the breadth of the problem in England. Some research has found that there is a gender gap (Gray, Peng, Stward & Thomas, 2004; Tinklin, 2003), others believe the problem is declining (Gorard et al., 2001) and some believe there is a gender gap, but that attention has shifted too quickly and completely away from females performance in school (Warrington & Younger, 2000). The research in Britain has developed various causes' and conclusions about the gender gap.

Tinklin (2003) was interested in researching high attainment and what differences there are with regards to the gender. According to Tinklin (2003), there is a commonly held notion that boys underachieve early in their education career and then pull up their grades later as they realize the importance of school. Tinklin (2003) looked at a lot of variables such as: social class, family, local area factors, gender, school type, parental education level, housing type, friends, homework, views of school, school conditions, teacher caring level, level of help from teachers, attendance and academic achievement. Tinklin (2003) found that there was a strong relationship between high attainment and social status. The same study found that girls took school more seriously and this factor offered an explanation for gender differences in high attainment. Tinklin (2003) found that the gender difference was equal in all schools and concluded that wider cultural changes are affecting young women's aspirations for the future as well as their academic performance. The notion that boys catch up later was proven incorrect. It was found that while girls valued academic success, boys who performed well in school had to

distance themselves from the peer culture where academic performance is not valued or seen as popular (Tinklin, 2003).

Another study on the academic gender gap in Britain by Gorard et al., (2001) concluded that the gap or problem is faced by mid-level to high achievers. Gorard et al., (2001) looked at a longitudinal study that was six years in length. They found that there is a small gap at level two for math, science, and English which favors girls, but at level three this is gone. They did find a gap that favors girls in English literature but only during entry into school and this gap eventually disappears (Gorard et al., 2001). According to Gorard et al., (2001), the gender gap exists at relatively high levels of achievement, but only for English. In math and science there were no gender gaps of significance.

Jackson (2002) was interested in the role of boys' behavior in the academic gender gap; she was interested in how it could be used to protect their self-worth. Jackson (2002) looked at the role of their behavior and the culture that exists in schools. Jackson (2002) qualified self-worth as being determined by ones' view and others perception of their ability to be successful, which is tied to academic ability. Jackson (2002) concluded that anti-school cultures provide a built-in excuse for boys who are not achieving academically, as the focus for academic failure is shifted from ability to lack of effort. Taking this view allowed the boys to protect their feelings of self-worth. Jackson (2002) stated that if this is common among boys it should provide important implications for teachers.

Gray et al., (2004) found that under achievement by boys is not evenly distributed across schools. Gray et al., (2004) concluded that raising achievement of both males and

females should be given the priority instead of eliminating the gender gap. These different studies demonstrated substantial variation is present in results and conclusions that exist with regards to the academic gender gap in Britain. Even where the results from overseas are consistent, the difference between the education system in Britain and the United States needs to be taken into account. Still the research from Britain can be used as a catalyst to continue to drive research in the United States to improve the academic gender gap and overall academic performance.

College Enrollment

In the 1970's males dominated college enrollment. Today females are the dominate enrollees. According to Riordan (2003), the ratio of college enrollment for 1970 was favored by males with a margin of 59 to 41; as of 2003 college applications are approaching a 60 to 40 divide in favor of females. According to Buchmann and DiPrete, (2006); Cho, (2007); and Sax and Harper, (2007) this dominance can be explained by females' academic performance earlier in their education career. Buchmann and Diprete (2006) indicated that females also hold a similar lead in college completion and this present gap in college completion extends across all racial and ethnic groups in the United States and in most industrialized nations.

Buchmann and DiPrete, (2006); Cho, (2007); and Sax and Harper, (2007) all offer some convergent and some divergent arguments on why females are entering and completing college at a higher rate.

Cho (2007) conducted the research by analyzing data from National Education Longitudinal Survey (NELS) from 1974 and 1994 and the National Longitudinal Survey from 1972. He looked at different factors such as performance in math, science, English,

reading scores and high school GPA. Cho (2007) found in the 1972 NLS data that most of the gender gap that favored males during this time period can be attributed to women taking fewer math and science courses and scoring lower on math tests. Also, while women scored lower on the math tests they produced higher overall GPA and reading scores.

Buchmann and DiPrete (2006) also based their work on the NELS data. Like Cho (2007) they found that the female performance advantage was rooted earlier in their educational career. The analysis also included an important difference from Cho (2007). Buchmann and DiPrete (2006) found that the advantage in white female college completion can be attributed to the declining college completion of males from families where the father only had a high school education or was absent. Buchmann and DiPrete (2006) recorded that the performance gap only grows in college between males and females.

Sax and Harper (2007) researched the growing female advantage in college attendance and completion by surveying students at colleges and universities across the United States. They looked at variables such as personality, identity, political values, social values and academics. Sax and Harper (2007) found that pre-college experiences had a large influence on college performance and could partially explain the end of college differences.

The researchers (Buchmann & DiPrete, 2006; Cho, 2007; Sax & Harper 2007) found that pre-college experiences had a large affect on the college gender gap. Buchmann and DiPrete (2006) and Cho (2007) found that the change in the labor market and more opportunities for women may also play a role in their increased performance in

high school. Girls may use the increased opportunities as motivation to improve their academic performance. Cho (2007) also noted that changes in expectations of women with regards to marriage and having children at an earlier age may have increased females performance in high school. This area of research reinforces the importance of eliminating the academic gender gap and suggests the need for increased research in elementary, middle and high school. Some researchers (Buchmann & DiPrete, 2006; Cho, 2007; Sax & Harper 2007) have demonstrated that a majority of the differences in college enrollment and completion are developed early on in the education system.

Method

Setting

The sample of participants in this project were taken from the seventh, eighth, tenth and twelfth grade students at a rural middle/high school in the Northeastern United States. The student body is comprised of a rural population. The main industry in this area is agriculturally based. The ethnic diversity is limited, while the socio-economic diversity is widely varied. In this community 8.3 percent of the populations' primary means of support is public welfare. This number is based on the number of students' receiving a free or reduced lunch.

The middle/high school population consisted of a total of 613 students from sixth grade to twelfth grade. The study focused on the seventh, eighth, tenth and twelfth grades. The total population of the grades included in the study was 341 students: 164 males and 177 females. The ethnic break down of the population was as follows: 97% of the students are White (not Hispanic origin). The remaining students are as follows: 2% multi-racial, .6% Hispanic or Latino, 1.1% Black or African American.

Participants

The participants of this project were comprised of 31 students. Of the total 31 students 17 were male and 14 were female. The distribution across the grade levels for the male subjects are as follows: seventh grade contained 6 subjects, eighth grade contained 4 subjects, tenth grade contained 3 subjects, and twelfth grade contained 4 subjects. The distribution for the female subjects are as follows: seventh grade, eighth grade and tenth grade all contained 4 subjects each. The twelfth grade contained 2 subjects.

Procedure

The project was created and completed for a masters' level thesis at the College at Brockport. The researcher was required to follow Institutional Review Board (IRB) procedures in development and implementation of the project. The researcher worked in conjunction with the staff at the middle/high school to implement the project.

Recruitment

To comply with the IRB requirements the researcher obtained parental consent for the subjects under the age of eighteen. This was accomplished by mailing home the parent consent form (Appendix A) and letter (Appendix B) to all the parents of the students in grades seven, eight, ten and twelve. The letter indicated a one week return date. Of the 341 consent forms that were mailed home only thirty-one were returned (9%). The thirty-one students were called down to the counseling center in groups of five and were asked to participate in the project. All of the thirty-one students agreed to take the survey. The students received an explanation of the project and were asked to sign a

form stating they understood the informed consent process. (See Appendix C for the student consent form.) The students were then asked to complete the survey. (See Appendix D for copy of survey).

Survey

The research project utilized a survey method to obtain the data. The survey was created by the researcher and the questions were developed after analyzing the literature on the topic. The survey included eight questions four of which were based on a Likert-type scale. The research focused on determining if a relationship existed between gender, academic performance, and utilization of the counseling center.

At the start, the survey asked the students to report their gender and grade level. The next section of the survey retrieved information on their use of the counseling center. The first question asked the students to report how frequently they used the counseling center in one year. The next question asked them to classify whether they used the counseling center for individual counseling, group counseling, career counseling, or scheduling. The next four questions were developed from the literature. Questions three and four asked about the stress level that students experience with regards to school and homework. Pomerantz et al., (2002) stated that girls experience more internal distress with regards to school but at the same time they out-perform males academically. These questions had the students respond on Likert-type scale to record their experience of stress. Question five and six were intended to record the students' homework completion rate and rank their level of organizational skills. Draves and Coates (2006) stated that boys get worse grades than girls. Grades are an important part of school and they have an impact on the choices the students will have in the future. According to Duckworth and

Seligman (2006), females are more self-disciplined than males which predicted their higher achievement scores. The survey attempted to measure self-discipline by having the students rank their organizational skills. The final two questions, seven and eight, asked the students to report their GPA and whether they had been retained in a grade. The research indicated that males were retained at higher rates than females and that retention was one of the most powerful predictors of dropping out of school (Frey, 2005; Jimerson et al. 2002).

The survey does not have reliability and validity since it is new and untested. The survey was administered to seventh, eighth, tenth and twelfth grade students who met consent requirements.

Results

The results of the survey were tallied into raw scores. The male total results are shown below on Table 1 and the female total results are show on Table 2. For questions one, two, and eight on the survey the results were displayed in percentages. For questions three through seven the results are broken down into mean scores for each question.

Table 1 Male Raw Survey Data

	1-5	6-10	11-15	16+	Total		
1 How often do you use the counseling center?	10	4	2	1	17		
	59%	24%	12%	6%	100%		
2 What do you use the counseling center for?	Counseling		Other		Total		
	Individual	Career	Group	Scheduling			
	5	4	1	12	22		
	23%	18%	5%	55%	100%		
3 How much stress do you experience associated with school?	Little				A lot		Total Mean
	1	2	3	4	5		
	2	5	8	2	0	17	2.6
4 How much stress do you experience with homework?	2	8	4	2	1	17	2.5
5 On average how often do you complete your homework?	0	1	2	3	11	17	4.4
6 How would you rank your organizational skills?	2	4	4	6	1	17	3
7 What is your current overall GPA? _____	Mean	89.1					
8 Have you ever repeated a grade?			yes	no			
			1	16			
			6%	94%			

Table 2 Female Raw Survey Data

	1-5	6-10	11-15	16+	Total		
1 How often do you use the counseling center?	11	2	0	1	14		
	79%	14%	0%	7%	100%		
2 What do you use the counseling center for?	Counseling		Other		Total		
	Individual	Career	Group	Scheduling			
	4	0	1	11	16		
	25%	0%	6%	69%	100%		
3 How much stress do you experience associated with school?	Little				A lot		Total Mean
	1	2	3	4	5		
	3	5	5	1	0	14	2.3
4 How much stress do you experience with homework?	4	3	5	2	0	14	2.4
5 On average how often do you complete your homework?	0	0	1	1	12	14	4.8
6 How would you rank your organizational skills?	0	1	1	2	10	14	4.5
7 What is your current overall GPA? _____	Mean	90.7					
8 Have you ever repeated a grade?			yes	no			
			0	14			
			0%	100%			

The sample was too small to obtain a correlation, so the male and female percentages and means were compared to determine the analysis.

When determining the frequency and type of use of the counseling center, the data from questions one and two were utilized. Question one asked the participants to rate the number of times they used the counseling center in a year: 1-5 times a year, 6-10 times a year, 11-15 times a year, or 16+ times a year. The data about males is displayed on Figure 1 and data about females follows on Figure 2. The comparison data is displayed on Figures 3 and 4.

Figure 1

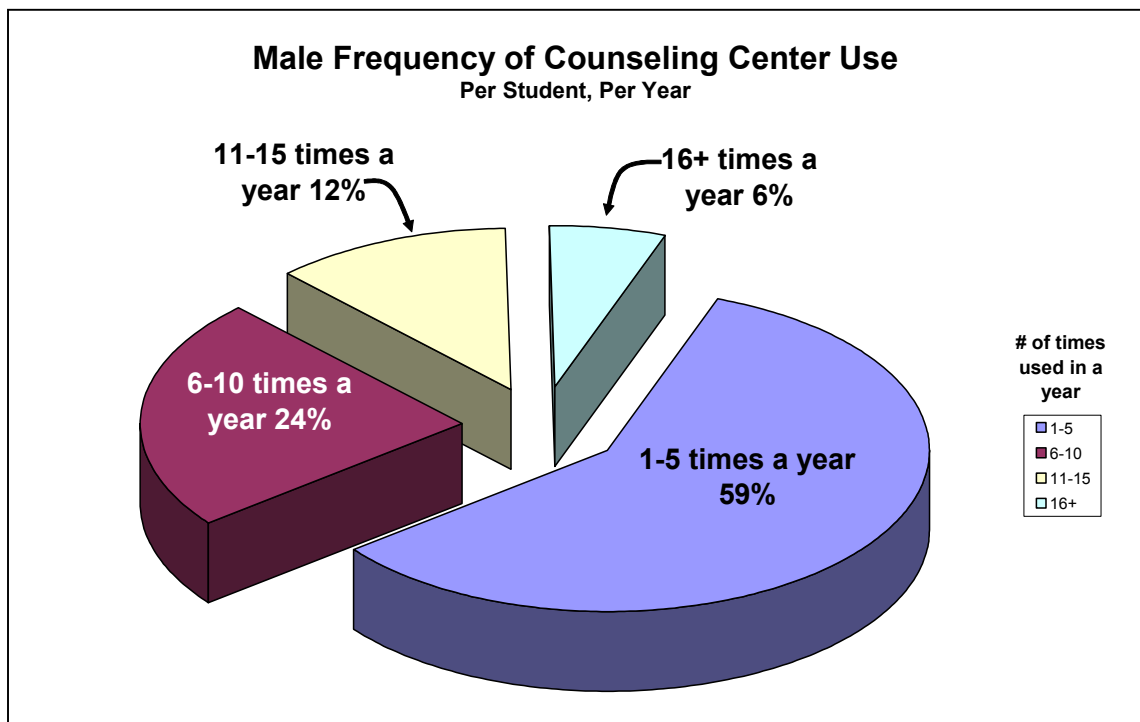


Figure 2

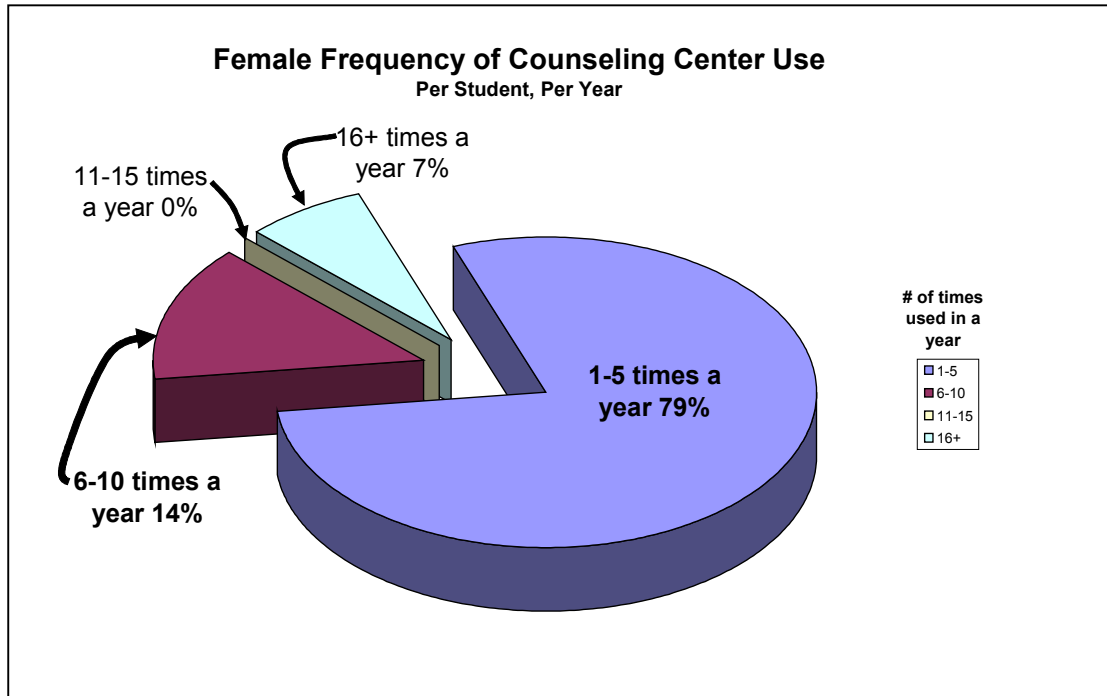
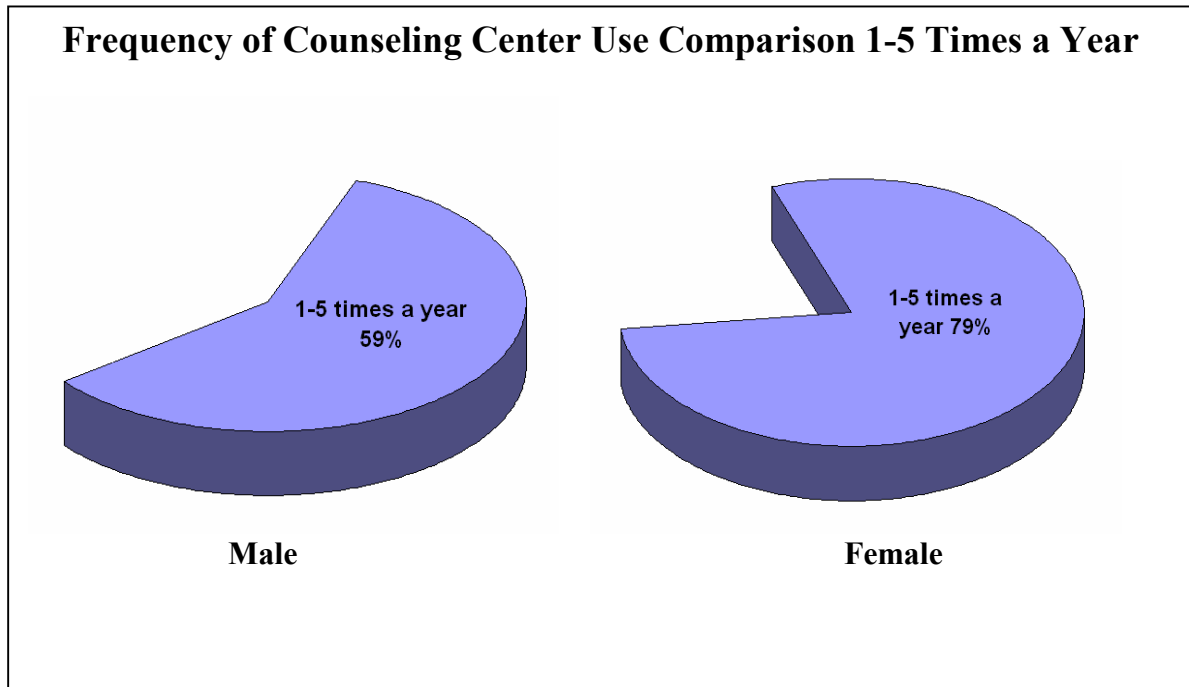
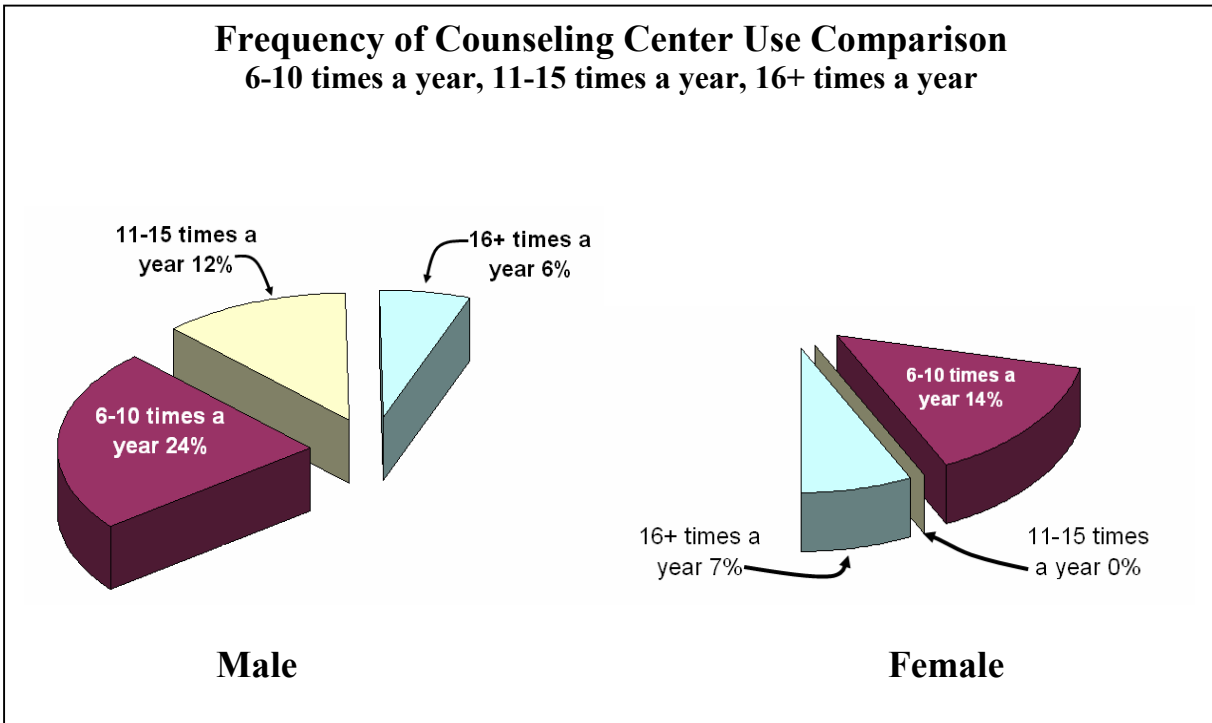


Figure 3



As displayed in Figure 3 the 1-5 times a year scale showed females used the counseling center more often on the low end of the scale.

Figure 4



When looking at the counseling center usage scales 6-10 times a year, 11-15 times a year, and 16+ times a year. Figure 4 showed that males used the counseling center with a greater frequency than females.

Question two was utilized to determine the reasons for students using the counseling center. They were asked to check all areas that applied to their use. The areas they were provided are: individual counseling, career counseling, group counseling and scheduling. The data about males is displayed on Figure 5 and the data about females follows on Figure 6. The comparison data is displayed on Figures 7 and 8.

Figure 5

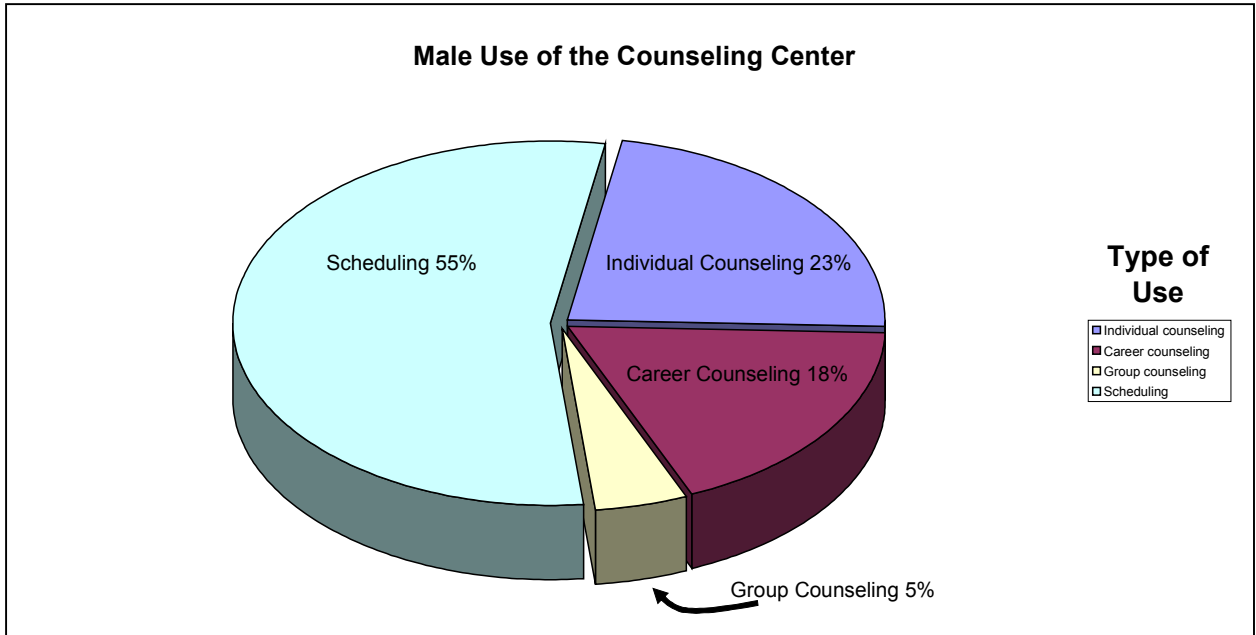


Figure 6

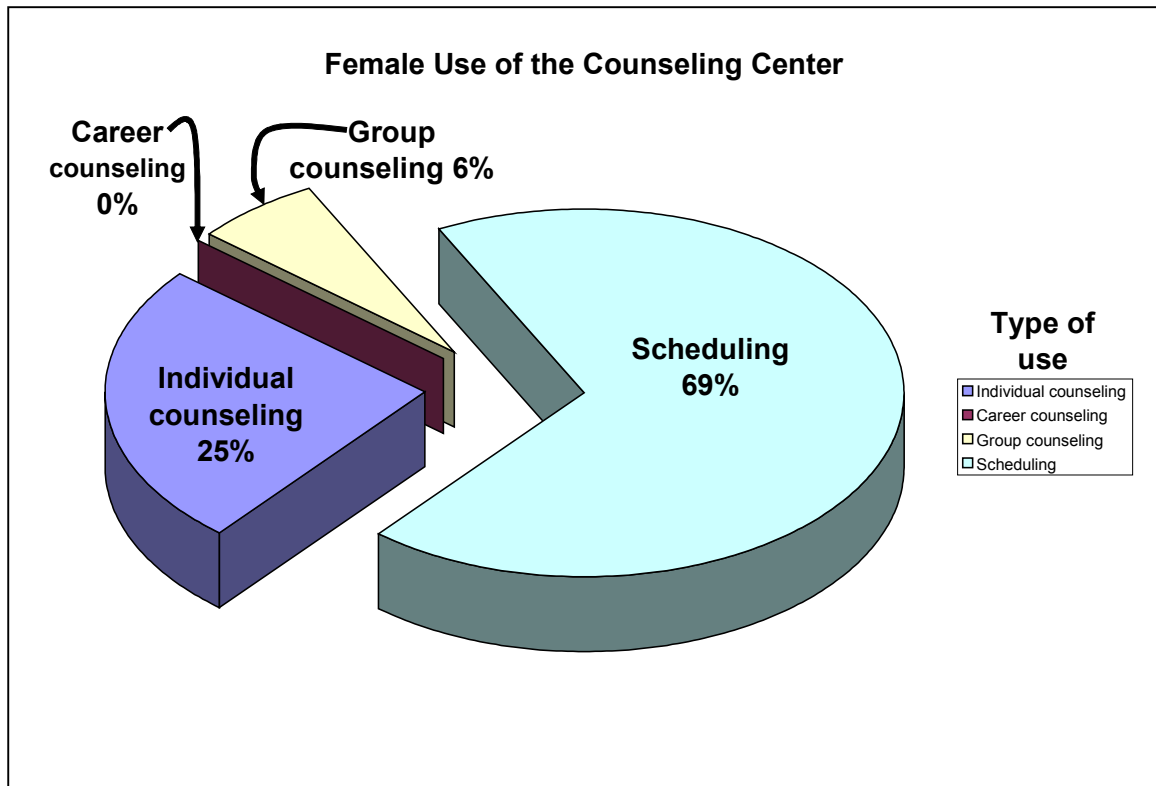
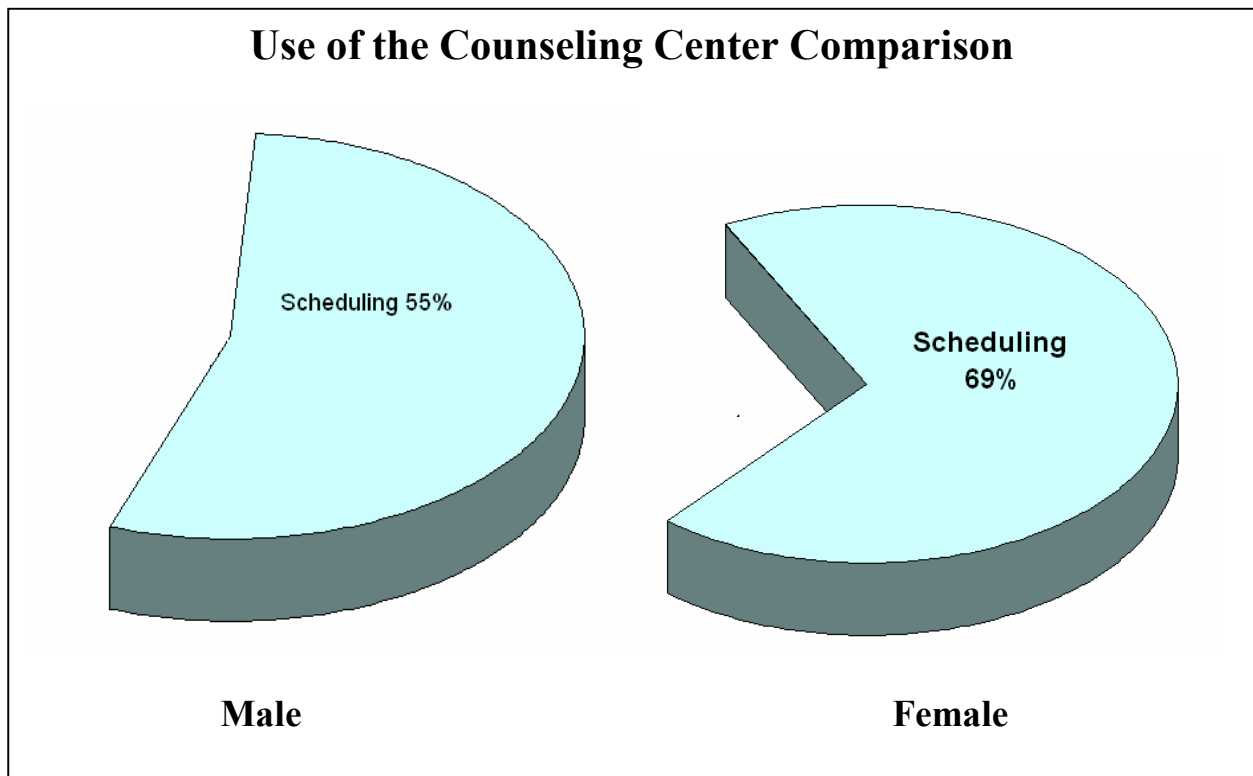
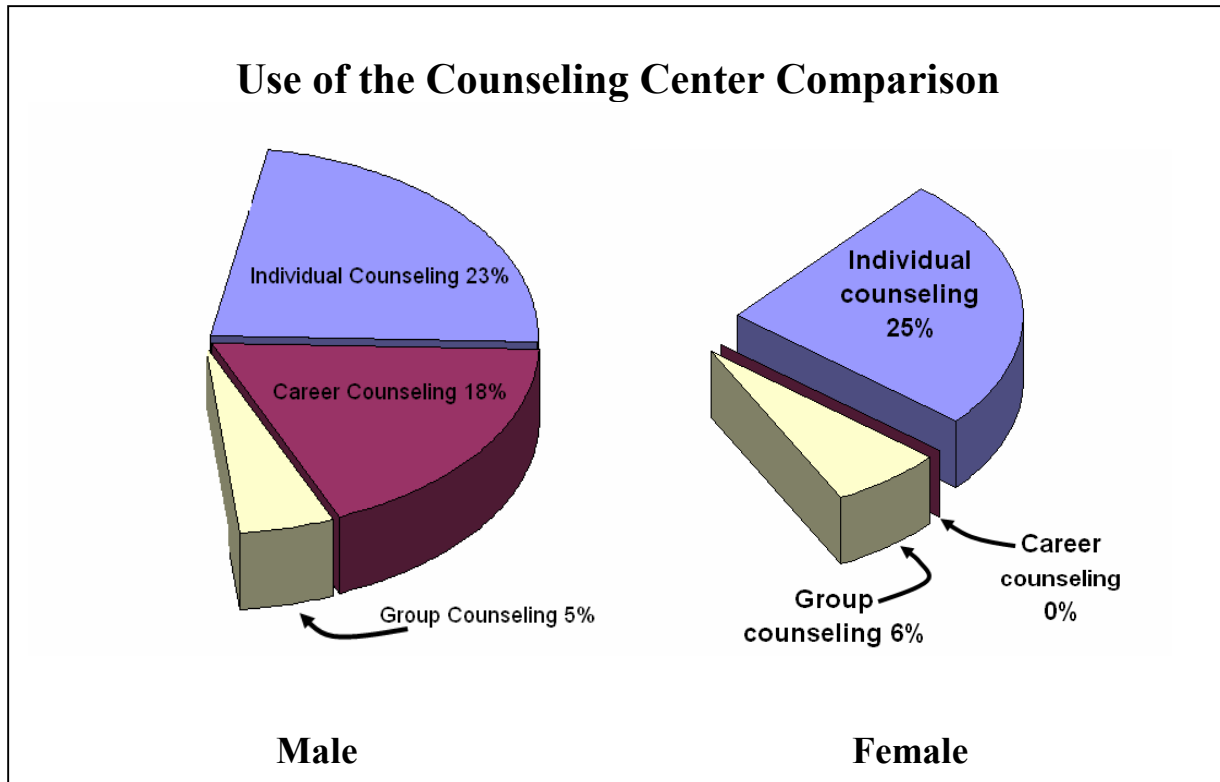


Figure 7



As displayed in Figure 7 the scheduling use of the counseling center shows that males reported 55% of their counseling center use was for scheduling and females reported 69% of their counseling center use was for scheduling.

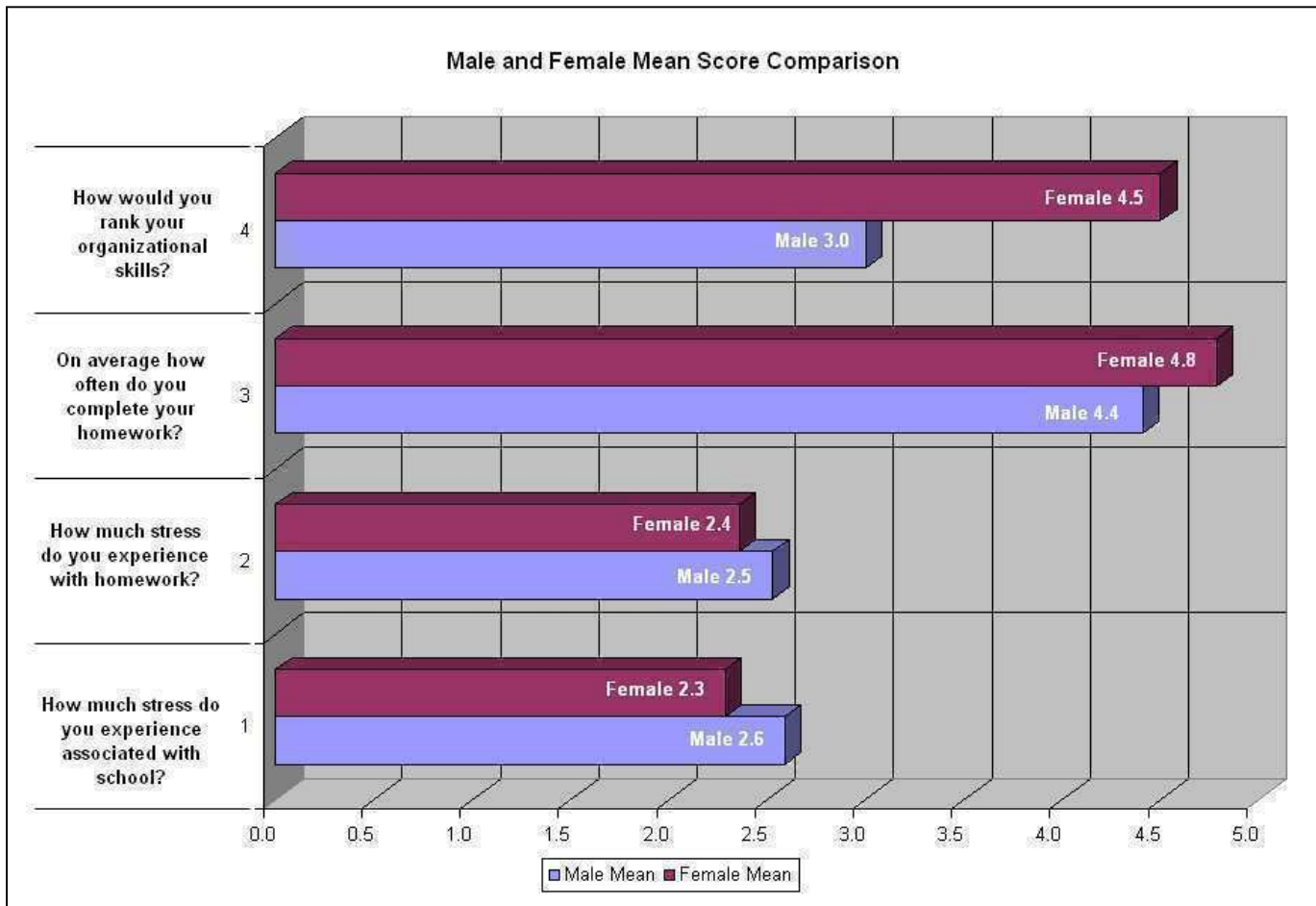
Figure 8



The percentages of individual and group counseling for males and females were fairly close. As shown in Figure 8, males reported that 23% of their counseling center use was for individual counseling and females report that 25% of their use was for individual counseling. For group counseling which is also shown in Figure 8, males reported 5% percent of their counseling center use was for group counseling and females reported that 6% of their counseling center use was for group counseling. The greatest difference was reported in career counseling. Males reported that 18 % of their counseling center use was for career counseling and females reported 0% for the career counseling option.

Questions 3 through 6 were utilized to determine stress level associated with school, stress level associated with homework, homework completion, and organizational skills. The data about males and females is displayed in Figure 9.

Figure 9



In the stress categories males reported higher means scores than females. While in the homework completion category and organization category females reported higher mean scores than males.

Question 7 asked the participants to report their current overall GPA. The females reported a mean GPA of 90.7 and the males reported a mean GPA of 89.1. The final question (8) asked the participants to report if they ever repeated a grade. 6% of males reported they repeated a grade and 0% of females reported grade repetition.

Discussion

In today's education realm there is a greater emphasis on accountability and performance. It will be important to find and implement a solution to the current gender gap that affects the education system. With males underperforming in schools there needs to be a concerted effort at remedying the situation; at this same time it will also be important to eliminate the swinging pendulum. In other words efforts are needed to increase male performance, while maintaining the high performance of females (Pomerantz et al., 2002; Riordan, 2003; Weins, 2005).

Due to the limited sample size the current research did not obtain significant or generalizable information, but it can be viewed as a learning tool for future research in the important area of the academic gender gap. The results provided some data that is contradictory to previous research and some that reinforces previous research. At the start of the project the researcher was interested in the relationship between academic performance, gender and utilization of the counseling.

Analysis of Findings

The researcher's assumption that females utilize the counseling center with greater frequency was not verified. The results indicated that out of the sample, males used the counseling center with greater frequency. When the percentages are combined for the ranges 6-10 times a year, 11-15 times a year and 16+ times a year, males reported 42% of their use was in that frequency range while females only reported a 21% of their usage in that range. When the project was developed the research hypothesized that females utilized the counseling center with greater frequency because it was reported by Altermatt and Kim, (2004); Pomerantz et al., (2002), that females experienced more

stress with school and tests. The researcher believed that the females used the counseling center with greater frequency to cope with this stress. The results of this project found the opposite to be true. The males in this project reported that they used the counseling center with greater frequency than females and also reported greater stress associated with school. As shown on Figure 9, males reported mean stress scores of 2.6 while females reported mean stress scores of 2.3. The males in the project also reported they experienced greater stress with homework when compared to females. Males reported homework stress mean scores of 2.5 while females reported mean scores of 2.4. This difference is not large; however, it is the opposite of what the researcher hypothesized and what was found in previous research (Altermatt & Kim, 2004; Pomerantz et al., 2002). While the data is not statistically significant it is interesting in light of the current gender gap that males reported more stress in school. It has been reported that females are dominating the current education landscape (CBS News, 2003; Conlin, 2003; Cook, 2006; Freeman, 2004; Greene & Greene, 2004; Riordan, 2003; Weins, 2005). This changed landscape may have increased the stress on males in the current education system; this may be a good avenue for research to take in the future.

The project also measured homework completion as a variable. According to Draves and Coates (2006), there is evidence that the academic gender gap is influenced by homework completion and females complete homework with greater frequency than males. The results from this project reflected this as well. The females in this project reported their homework completion mean score of 4.8 compared to the male reported mean score of 4.4 (shown on Figure 9). The results of the organizational variable also are important when compared to the homework completion scores. Researchers have found

that organization and self-discipline play a key role in GPA (Draves & Coates, 2006; Duckworth & Seligman, 2006). The females in the project reported an organizational skill mean score of 4.5 while males reported a mean score of 3.0. This mirrored research with females reporting greater organizational skills and greater homework completion. This clearly seems to be an area that needs improvement in the male framework of educational skills. This may be an area where future research can be used to help reduce the academic gender gap.

Another area of the results that is important to address is that of the counseling center use. There were some similarities in the results between males and females. As shown on Figure 8, males reported they used the counseling center 23% of the time for individual counseling and 5% for group counseling. Also shown on Figure 8, females reported they used the counseling center 25% of the time for individual counseling and 6% for group counseling. When talking about counseling center use there was also one large difference, which was in the category of career counseling. As shown on Figure 8, males reported 18% of their counseling center use was in career counseling and females reported 0% of their use in this category. This interesting result may indicate some information for another area of research. As discussed in the literature review subsection “Academic Self View” women have increased their performance in areas such as math and science (Freeman, 2005; Lips, 2004). Even with this improvement females are still underrepresented in careers that utilize math and science (Duckworth & Seligman, 2006; Freeman, 2005; Kimmelmeier & Oyserman, 2001; Lips, 2004; Riordan, 2003). This lack of career counseling by females may translate into their choices after they graduate high school. According to Lips (2004), females self-view changed from high

school to university and that shift may limit their possibilities in the future. This would be an area of importance for future research. While there is an effort to reduce the current academic gender gap affecting males, it is still important to support females in areas such as math and science career perusal.

The results regarding GPA and retention also fall inline with research (Entwisle, et al., 2007; Frey, 2005; Jimerson et al., 1997; Jimerson et al., 2002; American Association of University women Educational Foundation [AAUWEF], 1998; Pomerantz et al., 2002; Duckworth & Seligman, 2006, Draves & Coates, 2006, Perkins et al., 2004) the males reported they were retained 6% of the time while females reported 0% retention rate. With regards to reported GPA's, females reported a higher mean GPA of 90.7 compared to a male reported mean GPA of 89.1. These results show a slight gender gap that exists at this rural middle/high school. These results have to be viewed in light of certain limits that this project experienced.

Limitations of the Study

The largest limiting factor that was experienced in this research was that of the sample size. Due to the important IRB requirements, the number of parental consent forms that were received limited the number of students who could be approached to participate in the project. This limited number of subjects greatly affected the generalizability of the data. This limited number of returned parental consent forms appears to have affected the quality of the student who met consent requirements to participate in the project. The majority of responses received for question 7 which requested the students report their current overall GPA was fairly high. These high GPAs affected the means scores which in turn affected the reliability of the information. The

academic gender gap may be larger or smaller depending on what the results of a larger sample at this rural middle/high school would show. One method that could be used to obtain a larger return of parental consent forms was utilized by P. Carty (personal communication, April 22, 2008). This researcher enlisted the help of the health teachers at her site. The health teachers required the return of the parental consent form as a homework grade. The students were required to have their parents sign the form and return it to the teacher. The students received full credit on the assignment as long as they returned the form, their participation in the study was not mandatory. According to P. Carty (personal communication, April 22, 2008), this method worked extremely well and the researcher ended up with 230 students participating out of a total of 300 students. This method would have increased the sample size and would have reduced one of the current limits that affected the project. As stated earlier, the results for this project can be viewed as a learning tool for future research in addressing the important area of the academic gender gap.

Implications

If the academic gender gap is not addressed there will be long-term implications that will affect the society as a whole. The modern workforce will be increasingly diverse. An educational system without a significant gender gap will better prepare both male and female future workers for wider choices of meaningful work. It will also better position them to serve successfully in a diverse team of workers. As stated earlier, obtaining an education is a mutually beneficial task: to the individual and the society. When a group or sub-group of the population is not achieving in the education system the ramifications can be felt throughout the society. According to Conlin (2003), “the

growing educational and economic imbalances could also create social upheavals, altering family finances, social policies and work-family practices” (p.3). One can only speculate at the long-term affects, but there are bound to be economic and social implications.

Conclusion

In light of the research on the academic gender gap currently affecting males it will be important for future school counselors including the researchers to use this knowledge to support students as they traverse the education system. It will be important to support teachers as well as students and inform them of the different practices that will be beneficial to those students that are struggling. Connell and Gunzelmann, (2004); Gurian and Stevens, (2005) and Wiens, (2005) all offer suggestions to help increase male performance in the classroom. The multifaceted role of a school counselor places them in a unique position to assist students, teachers, administrators, and parents to eliminate the academic gender gap. There needs to be more research in the area of pedagogical practices that are specific to each gender and how those can be used in a co-educational setting to improve the achievement of males and females.

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Appendix A: Parental Consent Form

STATEMENT OF INFORMED CONSENT FOR PARENTS

This form describes a research study being conducted with students at [REDACTED] School about their utilization of the counseling center. The purpose of this research is to look at the relationship between utilization of the counseling center and gender on academic performance. The person conducting the research is a graduate student at SUNY College at Brockport. If you agree to have your child participate in this study, s/he will be asked to complete an anonymous questionnaire about her/his utilization of the counseling center. This data will then be compared to male and female GPA.

The possible benefit from being in this study is that information that is learned may be used to improve academic success at [REDACTED].

Your child's participation in this study is completely voluntary. Being in it or refusing to be in it, will not affect your child's grades or class standing. S/he is free to change her/his mind or stop being in the study at any time.

I understand that:

1. My child's participation is voluntary and s/he has the right to refuse to answer any questions. S/he will have a chance to discuss any questions s/he has about the study with the teacher who administered the survey after completing the survey.
2. My child's confidentiality is guaranteed. Her/his name will not be written on the survey. There will be no way to connect my child to the written survey. If any publication results from this research, s/he would not be identified by name. Results will be given anonymously and in group form only, so that neither the participants nor their schools can be identified.
3. There will be no anticipated personal risks or benefits because of participation in this project.
4. My child's participation involves reading a written survey of eight questions and answering those questions in writing. It is estimated that it will take fifteen minutes to complete the survey.
5. Approximately 341 people will take part in this study. The results will be used for the completion of a research project by the primary researcher.
6. Data and consent forms will be kept separately in a locked filing cabinet by the investigator and will be destroyed by shredding when the research has been completed.

You are being asked whether or not you will permit your child to participate in this study. If you wish to give permission to participate, and you agree with the statement below, please sign in the space provided. Remember, you may change your mind at any point

and withdraw from the study. Your child can refuse to participate even if you have given permission for her/him to participate.

I understand the information provided in this form and agree to allow my child to participate as a participant in this project. I am 18 years of age or older. I have read and understand the above statements. All my questions about my child's participation in this study have been answered to my satisfaction.

If you have any questions you may contact:

<u>Primary Researcher</u>	<u>Faculty Advisor</u>
Travis Hooper	Dr. Thomas J. Hernandez
(585) 538-3413	Department of Counselor Education (585) 395-2258

Signature of Parent

Date

Child's name _____
(Please Print)

Appendix B: Letter

January 22, 2008

Dear Parent or Guardian,

My name is Travis Hooper and I am currently working at [REDACTED] [REDACTED] as a graduate intern in the Counseling Center. I am sending this letter to explain the attached form.

To complete my graduate program I am required to implement a project. I will be anonymously surveying students at [REDACTED] about their use of the counseling center. I will be looking at three variables, utilization of the counseling center, gender and academic performance. When conducting research there are certain guidelines that I have to follow. The attached form is a consent form that contains a brief project description.

In order to have your son or daughter participate in this anonymous survey the attached form will need to be signed and returned. Please take the time to read the consent form thoroughly and consider the information provided. The forms will need to be returned to the Counseling Center (Rm. 104) by January 31, 2008. Please feel free to contact me at [REDACTED] if you have any questions or concerns.

I appreciate any help you may be able to provide.

Sincerely,

Travis Hooper
Counselor Intern

Appendix C: Student Consent Form

STATEMENT OF INFORMED CONSENT FOR MINORS

This form describes a research study being conducted with students at [REDACTED] School about their utilization of the counseling center. The purpose of this research is to look at the relationship between utilization of the counseling center and gender on academic performance. The person conducting the research is a graduate student at SUNY College at Brockport. If you agree to participate in this study, you will be asked to complete an anonymous questionnaire about your utilization of the counseling center. This data will then be compared to male and female GPA.

The possible benefit from being in this study is that information that is learned may be used to improve academic success at [REDACTED] School.

Your participation in this study is completely voluntary. Being in it or refusing to be in it, will not affect your grades or class standing. You are free to change your mind or stop being in the study at any time.

I understand that:

1. My participation is voluntary and I have the right to refuse to answer any questions. I will have a chance to discuss any questions I have about the study with the teacher that administered the survey after completing the survey.
2. My confidentiality is guaranteed. My name will not be written on the survey. There will be no way to connect me to the written survey. If any publication results from this research, I would not be identified by name. Results will be given anonymously and in group form only, so that neither the participants nor their schools can be identified.
3. There will be no anticipated personal risks or benefits because of participation in this project.
4. My participation involves reading a written survey of eight questions and answering those questions in writing. It is estimated that it will take fifteen minutes to complete the survey.
5. Approximately 341 people will take part in this study. The results will be used for the completion of a research project by the primary researcher.
6. Data and consent forms will be kept separately in a locked filing cabinet by the investigator and will be destroyed by shredding when the research has been completed.

You are being asked whether or not you want to participate in this study. If you wish to participate, and you agree with the statement below, please sign in the space provided. Remember, you may change your mind at any point and withdraw from the study. You

can refuse to participate even if your parent/guardian gives permission for you to participate.

If you have any questions you may contact:

<u>Primary Researcher</u>	<u>Faculty Advisor</u>
Travis Hooper	Dr. Thomas J. Hernandez
(585) 538-3413	Department of Counselor Education (585) 395-2258

I understand the information provided in this form and agree to participate in this project.

Signature of participant

Date

Birth date of participant

Signature of a witness 18 years of age or older

Date

Appendix D: Survey

