

IMPROVING BOYS ACHIEVEMENT THROUGH AUTONOMY SUPPORTIVE
PRACTICES THAT INCREASE INTRINSIC MOTIVATION

by

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Improving Boys Achievement through Autonomy Supportive Practices that Increase Intrinsic Motivation

Thesis directed by Senior Instructor Cynthia Stevenson

ABSTRACT

In recent decades, researchers have noted a significant academic gap between males and females. Boys are falling behind their female counterparts. Boys have lower grades and are less likely to participate in more advanced coursework. Boys are more likely to drop out of high school and college, and are graduating from higher education in lower numbers than females. Several reasons are given for the gender achievement gap in K-12 education, including the higher percentage of female teachers, the increase of a literacy focus, and the lack of experiential learning in school. In an effort to bridge the gender achievement gap, this study focuses on boys' motivation. This paper aims to explore motivation among adolescent males and how it is impacted by autonomy supportive practices by their classroom teachers. A mixed methods study is utilized with a sample of 24 adolescent male students and 14 teachers. A moderate positive correlation was discovered between intrinsic motivation and teacher autonomy support behaviors. The paper concludes with recommendations for classroom teachers that include approaches that may increase intrinsic motivation and ultimately student learning for male students.

The form and content of this abstract are approved. I recommend its publication.

Approved: Cynthia Stevenson

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

My Son

I looked down at my eighteen-month old son and could not believe what I was hearing. He dared to utter the word “no” to me in response to a directive. I was already raising a well-behaved, complaint six-year old daughter, who never demonstrated such defiance. Growing up as one of three daughters, I could not recall a time when my sisters or myself said “no” to our parents’ requests. We were unwilling to take the risk to discover what the consequences would be for such behavior! And yet, the male toddler in front of me did not seem afraid. Quite frankly, he didn’t seem afraid most of the time. He would often disregard my voice in favor of my husband’s. It almost seemed as if he was naturally gender-biased, quickly responding to my husband’s requests, while testing my authority at every turn.

This was one of many experiences I had in the early days of raising a son that turned my attention toward gender differences. Unlike many who argued that gender difference was more societal than genetic, I was thinking that my son arrived in this world with characteristics and dispositions that I could not easily explain. When he started school, I noticed more differences when he entered kindergarten. He complained a great deal about his school experience. He whined about the workload. He developed reading skills later than my daughter, and did not want to read unless prompted. He was unorganized and quickly forgot instructions. Though his defiance seemed to decrease in frequency, I still found him to be stubborn at times, and much less compliant than my daughter. Even now

(my son is ten years old), my son's academic and social progress is on his own terms. While my daughter often complies with parental expectations, my son is more interested in charting his own path, and following rules of his own design.

Boys in School

The experiences I share with my son are very similar to the patterns I have observed in schools with other boys. While I was the principal of a K-8 school, I noticed that boys were less compliant than girls, and much more likely to receive disciplinary referrals for defiance. I continued to observe how this "lack of compliance" within school settings seemed to affect boys' perception of school as well as their academic performance. The vast majority of students that received disciplinary referrals for behavior were boys. When I became the principal of an alternative high school designed for students who were behind on their high school credits, boys were disproportionately represented as a significant majority. My personal observations made it clear that there were significant differences between the achievement of boys and girls, and boys were in the rear.

But my observations of academic gender differences were not limited to boys who lacked academic skills. When I taught AP US History, I also witnessed the same kind of underachievement, even among boys with high academic skills. Most surprisingly, even boys who completed their homework and demonstrated strong command of the content downplayed their academic prowess, especially among their male peers.

As a district leader in an urban-fringe school district outside of Denver, Colorado, I noted similar patterns of underachievement among male students. In analyzing 2015-2016 high school data by school, there was little gender disproportionality discovered among 9th grade students whose grade point average for the first three quarters (GPA) was 3.0 or

higher. However when looking at the same cohort of students by school, boys were disproportionately represented in the lower cumulative GPAs of .5-1.5, representing approximately 62% of the students in this category, to 38% girls. Additionally, when reviewing the number of students by school that were suspended in 2014-2015, boys were overrepresented at all district high schools, with approximately 68% of all suspended students being male, compared to approximately 31% female. Boys were overrepresented in both the category of low GPAs as well as disciplinary referrals and suspensions.

The Academic Gender Gap

The literature supports my experiences as it relates to boys' achievement. Boys are more likely to receive disciplinary referrals, be identified for special education, and be diagnosed with ADHD (Gurian, 2005; Tyre, 2008). When looking at groups of higher achieving students, girls typically outnumber boys (Collins, Kenway, & McLeod, 2000). Higher numbers of females persist and earn degrees in higher education (Freeman, 2004). Competitive universities are receiving a higher number of female applicants, leaving admissions officers in a challenging spot to maintain equal gender balances (Tyre, 2008).

The same trend of male underachievement is being observed internationally. When comparing girls and boys on fourth grade reading performance on the 2001 Progress in International Reading Study, girls consistently outperformed boys across all 35 countries, with an average scale score gap of 20 points (PIRLS, 2001). The literature on boys' underachievement includes studies conducted in Great Britain, Germany, Australia and even some cross-cultural studies (Clark, Thompson, & Vialle, 2008). According to Whitmire (2010) other countries have not solved the crisis of male underachievement, but have given more attention to it than the United States. The United States has historically focused on

underachievement as it relates to girls (Tyre, 2008) in their effort to provide equal access to women. In some cases, attention to male underachievement has been met with criticism, as it is assumed that efforts to help male achievement may undermine feminist efforts (Tyre, 2008). While other countries have been attentive to the gender gap, the United States Department of Education has not focused on gender to the same degree they have focused on race and income in investigating achievement gaps (Whitmire, 2010).

In K-12 education, test scores remain fairly stable between males and females (Hedges & Nowell, 1995). In some cases, test scores for males are higher, but grades earned by males remain lower than that of girls (Duckworth & Seligman, 2006). In 2000, grade point averages (GPAs) for girls were higher on average than for boys, 3.05 compared to 2.83 (Perkins, Kleiner, Royer & Brown, 2004). Boys are taking less Advanced Placement courses than their female counterparts, (Bae, Choy, Geddes, Sable & Snyder, 2000). Even though test scores confirm equal academic strength for males and females, girls are participating more in rigorous coursework and are earning higher GPAs than boys.

The concern about the gender gap is largely rooted in the concern that boys are falling behind in the global economy. According to Whitmire (2010), jobs that once required a high school diploma require college, or some years of post-secondary training. Within the new reality, college might be considered the new high school. The gender gap between males and females is represented in the shrinking numbers of men on college campuses. Though the percentage of women attending college has increased since 1994, the percentage of men attending college has remained the same (Lopez & Gonzalez-Barrera, 2014). Some private colleges report ratios as disproportionate as almost 60:40 in favor of women (Borzelleca, 2012). Since 1988, the number of students enrolling in post-baccalaureate studies has

increased overall, but disproportionately by gender. “Between 2002 and 2012, the number of full-time male post baccalaureate students increased by 28 percent, compared with a 42 percent increase in the number of full-time female post baccalaureate students” (Snyder & Dillow, 2015, p.378). This gender gap has many educated women concerned about finding a male mate of equal educational attainment (Sax, 2007; Whitmire, 2010).

Possible Reasons for the Gender Achievement Gap

There are several reasons provided for explaining the gender achievement gap. This literature review will provide a summary of the most common reasons noted for the gender achievement gap. It is clear that though many believe they know what primarily influences boys’ underachievement, the causes of underachievement are likely multi-faceted and complex. Additionally, because there is no homogeneous boy-community; strategies that work for some males will most likely not work for other males. Boys, like other subgroups, deserve to be respected for their diversity. We begin by exploring the first reason provided for boys’ underachievement: lack of fathers and male teachers.

In explaining the gender achievement gap, many identify the absence of male role models in the home, as well as the absence of male teachers in the classroom. The percentage of children born to unwed mothers is at “record-high levels in data dating back to 1940” (Whitmire, 2010, p. 4). According to National Health Statistics, about 40% of children are born to unwed mothers (“Unmarried Childbearing,” n.d.) Though many emphasize the importance of the father’s role in healthy development for their sons (Blackenhorn, 1995; Sax, 2007), the research around the role of fathers in their boys’ lives and the degree to which their presence improves outcomes is not conclusive (Hetherington & Stanley-Hagan, 1999). Boys with absent fathers may be at higher risk, but it is uncertain

whether this is due to the father's absence, or the economic stresses on the home due to the father's absence (Hetherington & Stanley-Hagan, 1999). Furthermore, boys' mothers tend to be more involved in their academic lives evidenced by parent-conference attendance and other school-related events (Sax, 2007).

There is an obvious gender gap among classroom teachers in favor of females that is often referred to in discussions about boys' underachievement. Only about a quarter of K-12 teachers are male (Whitmire, 2010). The gap is even more pronounced in primary/elementary schools, where sometimes the only male teacher is found in the gymnasium. Some argue that traits more prevalent to females are regarded in schools (Heyder & Kessels, 2013). One school found female teacher bias against male teachers in the school because the male teachers focused less on collaboration (Tyre, 2008). Some men may fear that as teachers, others will think they have sexual feelings toward children (Lyndon, 2016). As the gender gap in K-12 teaching expands, many worry that it contributes to boys feeling like school is not a place that is valued by their gender (Whitmire, 2010). Tyre (2008) asserts that the lack of male teachers in education boils down to money. She says that states that pay higher salaries have higher percentages of male teachers (Tyre, 2008). Though it is clear that females outnumber males in the profession, it is less clear whether the gender of the teacher makes any difference in male achievement.

The research around the role of teachers' gender has been mixed. Dee (2007) argues that gender indeed matters, that when students had a teacher of the same gender, they performed better. However, Sokal, Katz, Chaszewski, and Wojcik (2007) found that struggling male readers responded better to female teachers than male teachers. Pedagogy seems to be much more important than the gender of the teacher, as one study in Australia

found that the gender matching hypothesis didn't hold (Martin, Marsh, Cheng, & Ginns, 2010).

Boys Negativity Toward School

While it is unclear whether the gender of the teacher matters, the difference in school behaviors between male and female performance in school is well established. Duckworth and Seligman (2006) found that girls were more self-disciplined. According to Else-Quest, Hyde, Goldsmith, and Van Hulle (2006), girls have more impulse-control compared to boys. Early primary teachers often comment about boys who can't seem to sit still (Sax, 2007; Whitmire, 2010). Jones and Myhill (2004) found that underachieving boys and high achieving girls were consistent with stereotypes for teachers. Jussim and Harber (2005) argued that teacher perception of performance followed the actual performance noted based on gender. It is unclear whether teacher perspective is shaped by the difference in behaviors exhibited by boys and girls, or if teachers perpetuate the stereotypes.

Some argue that boys associate academic achievement in schools with femininity. Heyder and Kessels (2013) found that the more boys associated schools with being feminine and the more they associated with negative masculinity, the worse their performance in school. One study in Germany found that boys oppose a "study culture" and are very concerned with approval from their peers (Van Houtte, 2004). Santos, Galligan Pahlke, and Fables (2013) study found that boys within peer groups had worse academic outcomes if they adhered closely to gender-type behaviors, namely emotional stoicism and physical toughness, possibly because these characteristics are not well-suited for most school environments. Burke (1989) found that the more students identified with feminine gender identity, the higher their GPA. Ironically, gender atypical males demonstrated less engagement in

school, though this may be due to feeling rejected by other males (Ueno & McWilliams, 2010). For boys, peer acceptance is very important and more important than acceptance from adults (Sax, 2007). Jackson and Dempster (2009) found that masculinity for male students is often associated with an “effortless achievement” (p. 252). The association of maleness with anti-schoolwork attitudes and femaleness with positive schoolwork attitudes is detrimental to the learning growth of males.

So where does all of this negativity toward school begin? Many researchers argue that boys who are not developmentally ready for the rigors of school are forced into academic content too early (Sax, 2007; Whitmire, 2010). While kindergarten used to be largely about socialization and learning through play, today’s kindergarten is more aligned to yesterday’s first grade standards (Sax, 2007). Brain research suggests that many boys lag behind most girls in terms of the skills necessary to be successful in school (Tyre, 2008; Whitmire, 2010). While some may overestimate the difference in male and female brains (Tyre, 2008), it is fair to say that there are different rates of maturation (Buchmann, DiPrete, & McDaniel, 2008) that can affect achievement differences. Therefore, pushing boys to settle in to academic content when they are not developmentally ready to do so results in many boys experiencing a negative experience in school from the very beginning. Much attention has been dedicated to the idea of “red-shirting” or having kids sit out a year before beginning kindergarten (Graue, & DiPerna, 2000). It is uncertain whether having boys start school late or retaining them in elementary school helps their achievement (Graue & DiPerna, 2000).

For decades, there has been a great deal of focus on boys of color and their relatively low performance in educational systems (Burns & Bracey, 2001; Whitmire, 2010). While the gender gaps can be observed more sharply among African-Americans, with black females

graduating at almost double the rates of their black male peers in some schools (Whitmire, 2010), the gender gap goes far beyond race and income. Almost 25 percent of White males with college educated parents scored *below basic* on the National Assessment of Educational Progress as compared to 7 percent of females (Klienfeld, 2006 as cited in Whitmire, 2010). The challenge of boys' underachievement is not limited to boys of color.

Some argue that boys' underachievement can be understood by an increased emphasis on literacy in schools. According to Whitmire (2010), "the world has become more verbal; boys haven't" (p. 6). In recognizing the literacy gap for boys, some schools have attempted to address the challenge by improving literacy for all students (Burns & Bracey, 2001), though this may not work effectively to address issues that specifically address the gender gap in literacy. In an effort to prepare children for success in college, schools have become more focused on literacy skills, which has a disproportionately negative affect on boys' achievement in its current form. While schools are working diligently to improve boys' literacy, bookstores and publishers have marketed most of their books toward girls (Whitmire, 2010). According to Gurian (2005), one step toward improving boys' literacy is encouraging them to read books they themselves find engaging. In terms of writing, schools often ask boys to write about their feelings, which may not be as engaging for boys (Tyre, 2008). A significant impact on boys' writing is the emphasis on avoiding any gore or violence. Teachers who teach with the fear of school violence looming over them are deeply concerned about any writing that includes violence, which can be a challenge for boys who enjoy writing about adventure and war (Sax, 2007).

Responding to Boys

Some experts advocate for what they refer to as boy-friendly strategies to improve learning for boys in K-12 education. Some suggest that boys (and girls) can benefit from single-sex schools or classes (Sax, 2007; Tyre, 2008; Whitmire, 2010) while other research does not support the effectiveness of single-sex classrooms (Else-Quest, & Peterca, 2015). While there is experiential knowledge and book knowledge, some experts argue that school is sorely lacking in experiential knowledge, relying too much on written resources and not enough on experience (Gurian, 2005; Sax, 2007). Schools are encouraged to provide boys opportunities to move around and take brain breaks (Gurian, 2005; Sax, 2007, Tyre, 2008). While these different strategies may improve the learning experiences for boys in some schools, it is unlikely that these changes will produce systemic change that will significantly change outcomes for boys.

Missing from the discourse on boys' underachievement is how practices can be changed to produce better learning opportunities that result in better long-term outcomes for boys. Currently, boys are receiving the message in schools that they are "defective" (Gurian, 2005, p. 25) when it may actually be the dysfunction of the system itself that is producing inequitable outcomes. While it is noted that girls' have higher GPAs (Perkins, Kleiner, Royer & Brown, 2004), more research is needed concerning how classroom practices could improve learning for boys and ultimately their achievement. Students who underperform are at risk for being excluded from more prestigious universities. However, the more devastating reality is that students, who fail courses repeatedly, are at much higher risk of dropping out. In both cases, the experience of schooling is less than optimal. Both issues can be addressed by examining how current classroom practice support, or hinder boys' achievement.

Motivation

There are a variety of areas that could be investigated within the classroom environment to better understand boys' achievement, including teacher disposition, peer-to-peer interactions, or pedagogy. However, one of the most important areas is undoubtedly the study of motivation.

There is one statement that I have heard repeatedly as it relates to boys who underachieve, "He lacks motivation." It seems that many educators have responded to the apparent lack of engagement observed in many boys by assuming that they have no motivation to be successful, at least in academic pursuits. Rather than assuming that disengagement is evidence of laziness or a lack of motivation, it is important to understand what researchers have discovered in the study of academic motivation.

Many researchers have investigated motivation in academic settings, referred to as academic motivation. Motivation is an important consideration in academic performance and therefore imperative to a discussion of boys' achievement. Extrinsic motivation typically encompasses motivation that comes from external sources, like a teacher or a specific result or goal, i.e. grades, graduation. Brown (as cited by Cherry, 2016) refers to extrinsic motivation as motivation that is driven by known external rewards, whether material or psychological. Intrinsic motivation refers to genuine interest in the subject, where motivation is driven from within the student. Extrinsic motivation can also be rewards or incentives while intrinsic motivation can be observed as pure enjoyment in a task (Lepper, Corpus, & Iyengar, 2005).

Classroom teachers often activate both extrinsic and intrinsic motivation. Many researchers argue that rewards and incentives that promote extrinsic motivation actually

undermine intrinsic motivation, which is correlated with learning and achievement (Lepper, Greene, Nisbett, 1973). According to a meta-analysis conducted by Cameron and Pierce (1996), rewards did not undermine the intrinsic motivation of students. Researchers have fired back at Cameron and Pierce (1996) by claiming that the methodology they used in their research was inappropriate, skewing the results of their study (Kohn, 1996; Lepper, Keavney & Drake, 1996; Ryan & Deci, 1996). Hopkins and Mawhinney (1992) argued that rewards in applied settings (to reward behavior after the behavior) could be appropriate. While there is debate in the literature about how rewards may undermine intrinsic motivation, it is clear that intrinsic motivation is correlated with higher perceptions of academic competency and higher achievement (Gottfried, A.E., Fleming, Gottfried, A.W, 2001). While intelligence is a predictor of academic achievement (Kuncel, Hezelett & Ones, 2004), motivation is an even more important predictor (Steinmayr & Spinath, 2009). More specifically, researchers have purported that intrinsic motivation is correlated to improved achievement (Lepper, Corpus, Iyengar, 2005; Lloyd & Barenblatt, 1984).

Connected to the concept of motivation is self-concept or self-efficacy. Self-efficacy refers to the belief that one can achieve a task (Bandura, 1996) and improved self-efficacy has been correlated to improved achievement (Steinmayr & Spinath, 2009). In a meta-analysis of studies connecting self-perception to performance, Hansford and Hattie (1982) found a small correlation between self and achievement. Gottfried, A.E, Fleming, and Gottfried, A.W. (2001) found that high intrinsic motivation was correlated with more favorable perceptions of academic competence (self-efficacy) and higher achievement.

Intrinsic motivation is characterized by doing an activity for its own sake rather than external reward (Deci & Ryan, 2008). According to Self-Determination Theory (SDT),

humans have a psychological need for autonomy, competence and relatedness (Deci & Ryan, 2008). Within SDT, Cognitive Evaluation Theory asserts the need for competence and autonomy, which becomes important to understand in a classroom setting (Deci & Ryan, 2008). Strong self-concept, self-efficacy and self-determination theory all provide important frameworks for understanding how students apply themselves to academic work.

Theories on Motivation and Academic Performance

Goal theory and expectancy-value theory. Other important theories related to motivation and academic performance include the goal theory and the expectancy-value theory (Steinmayr & Spinath). The goal theory divides students' goals into performance and learning goals. Performance goals would be more associated with grades, while learning goals would be more closely associated with improving knowledge and skills. Learning goals are more oriented toward better performance (Utman, 1997). The expectancy-value theory, expanded by Eccles (1983) into the field of education, has two major parts. The first is that students have a certain "expectancy" of how they will perform on a task based on their own self-concept of their ability. The second part is that students attribute a certain amount of value to a task. The subjective value they ascribe will determine if they will approach the task, and if so, how long they will persist.

There are four important aspects to the subjective task value described by Steinmayr and Spinath (2009), but purported by Eccles (1983): attainment, intrinsic, utility, and cost. Attainment refers to a student's sense that they can do the task. Intrinsic is their sense of interest concerning a task. Utility is how useful the student deems the task to be. Cost refers to what the student believes they will need to give up in order to complete the task. The Expectancy-value theory is one of the best constructs for understanding motivation in a

classroom because it is highly correlated with achievement and is domain-specific (Steinmayr & Spinath, 2009). Unlike some other motivation constructs, expectancy-value theory has been studied within a variety of domains or subject areas, and has helped researchers understand the difference between students' self-concept within different domains (Eccles, 1983; Eccles, Wigfield, Harold & Blumenfeld, 1993; Meece, Glienke & Burg, 2006; Spinath, Eckert & Steinmayr, 2014).

Expectancy-value theory was studied in very young children where it was discovered that younger children have a more positive belief about their self-concept that declines as they continue through elementary school (Eccles, et. al, 1993; Stipek & Mac Iver, 1989). Xiang (2013) found that elementary students subjective task value decreased in physical education, as they got older. Bong (2001) found that high school students had a more differentiated sense of self-concept as it related to academic subjects. It is evident that students' self-concept and their sense of individual academic ability in school changes as they mature.

Motivation and teacher behavior. The encouraging news is that the changes observed by researchers in student motivation can be affected by the behaviors of their teachers. While most believe that teachers play an imperative role in academic learning, it is less understood how their behaviors may impact student motivation. According to Trent and Slade (2001), students who left school before graduating asserted the importance of the role teachers played in their educational experience. Ginorio and Huston (2001) found a positive correlation between school persistence and supportive teacher practices among at-risk Latino students. According to Martin, 2002, there are motivation boosters and guzzlers; behaviors that enhance motivation and those that decrease it. Motivation boosters include promoting

success in the classroom, focus on mastery and processes and contextualizing student learning (Martin, 2002). Guzzlers include anxiety, uncertain control and failure avoidance (Martin, 2002). Teachers who increase motivation boosters and reduce guzzlers are more likely to improve student outcomes.

Autonomy Supportive Practices in Teachers

The literature supports the notion that teachers who engage in autonomy supportive practices enhance intrinsic motivation in their students. According to Reese (2006), “when teacher-student interactions go well, teachers function both as a guide to structure students’ learning opportunities as well as a support system to nurture students’ interests and to enable students to internalize new values, develop important skills, and develop social responsibility” (pgs. 225-226). Teachers who supported autonomy in students had higher rates of intrinsic motivation (Deci, Nezlek, & Sheinman, 1981; Deci, Vallerand, Pelletier & Ryan, 1991). Additionally, students in more non-controlled environments had more interest and more conceptual learning (Grolnick & Ryan, 1987). You, Dang and Lim (2016) found a positive correlation between teachers’ motivational behaviors and students’ self-efficacy and intrinsic motivation in reading, Math and English. It has been supported in literature that intrinsic motivation in students is impacted by the autonomy supporting behaviors of their teachers.

While many studies have found a positive effect on student motivation when teachers use autonomy supportive practices, the opposite has also been discovered. Flink, Boggiano and Barrett (1990) found that teachers who were controlling and teaching under pressured conditions got lower performance from students. Assor, Kaplan, Kanat-Maymon and Roth (2005) found that directly controlling teacher practices, like not allowing students to work at

their own pace, were correlated with extrinsic motivation and amotivation in students, reducing their authentic engagement. In one study, students who had higher competence who also had a controlling teacher still desired more challenging assignments, but students with lower competence did not (Boggiano, Main & Katz, 1988). This last study suggests that students with high competence are not as adversely affected by controlling teachers, though students with lower competence may be significantly affected. This is especially important in considering how teacher practices affect the motivation of students with low self-concept or self-efficacy. Teachers who use directive techniques that emphasize an external locus of control reduce intrinsic motivation in their students.

While motivation for all students is affected by teacher behavior, motivation theorists have found noted differences between girls and boys as it relates to self-concept and expectancy value. According to Hansford and Hattie (1982), boys have a stronger self-concept than girls. Boys have a lower task value than girls (Wigfield, 1997), and liking their assignments holds more importance (Freudenthaler, Spinath, Neubauer, 2008). Boys show less motivation for reading than girls (Wigfield & Guthrie, 1997). In a study by Boerma, Mol, and Jolles (2016), boys had poorer reading attitudes and lower reading task value than girls. While Math ability between the sexes does not show a significant gender gap, the perception that boys have stronger Math ability persists (Hyde, Fennoma & Lamon, 1990).

Domain-specific self-concept defined by gender has been well established in the literature. Eccles et. al, (1993) found that boys had a stronger self-concept in Math and sports; girls in reading and music. Meece, Glienke and Burg (2006) found boys tended to have more positive achievement-related beliefs in the areas of Mathematics, science and sports, while girls were more positive in Language Arts and reading. Spinath, Eckert and

Steinmayr (2014) found similar domain-specific results—boys with Math; girls with language. Interestingly, domain-specific self-concept was noted as early as the first grade (Eccles, et. al, 1993). DeBacker and Nelson (1999) found that internalized motivation factors were more highly correlated with science achievement for boys, while girls were more externally motivated. Boerma, Mol and Jolles (2016) found that teacher perception mattered more to girls than boys and affected their attitude and task value related to reading. The literature supports the notion that motivation can be domain-specific, as well as gender-specific.

According to Marzano (2001), there are specific instructional strategies that yield higher student outcomes. John Hattie (2013) describes instructional strategies that are proven to have a larger effect size on student outcomes when compared to other instructional strategies. Intrinsic motivation is acknowledged as an important lever in improving academic achievement (Deci & Ryan, 1985; Gottfried, A.E., Fleming, Gottfried, A.W., 2001). Self-Determination theory and Expectancy-Value theory provide important frameworks to understand intrinsic motivation. Studies on autonomy supportive teacher practices and direct controlling teacher practices also provide invaluable information to help practitioners better understand how the adult in the classroom can help or hinder students' motivation, in this case, male students.

The literature supports the notion that motivation is important for all students, and that intrinsic motivation is most closely associated with authentic learning. What is also evident is that teachers who engage in more autonomy supportive practices are more likely to enhance intrinsic motivation in their students. While intrinsic motivation is important for all students, it may be more important for boys, who are less likely to respond to teacher

perception or teacher demands. There is some evidence in the literature to suggest that boys are more internally motivated, and less influenced by teacher perception. As discussed earlier, if boys are less likely to perform academically in response to the teachers' desire, or in response to the teacher's control, it may help to explain the gap in academic achievement between males and females; particularly in educational systems marked by more compliance and control. Furthermore, if this assertion has any credence, it is worth studying school environments to determine the presence of autonomy supportive practices and controlling practices, and how these practices impact the achievement of boys.

CHAPTER II

METHODS

This chapter will describe the methodology utilized for the study. It will begin by providing the justification for the study by briefly summarizing the problem of boys' underachievement that is detailed in the literature review. It will continue by describing the purpose of the study by responding to the problem of boys' underachievement by narrowing in on motivation. It will then move on to the research questions. It will continue by describing the setting for the research study, including a description of the district and the schools involved in the study. It will describe the participants and what strategies were utilized to recruit them. It will explain the mixed methods approach and the importance of using both quantitative and qualitative research methods to answer the research questions. It will detail the research design and the instruments utilized for the study. Finally, a description of the procedure will be provided.

Problem

In recent years, many have been concerned about the increasing underachievement of males (Sax, 2007; Tyre, 2008; Whitmire, 2010). Boys are more likely to receive disciplinary referrals, be identified for special education, and be diagnosed with ADHD (Gurian, 2005; Tyre, 2008). When looking at groups of higher achieving students, girls typically outnumber boys (Collins, Kenway, & McLeod, 2000). Higher numbers of females persist and earn degrees in higher education (Freeman, 2004). Competitive universities are receiving a higher number of female applicants, leaving admissions officers in a challenging spot to maintain equal gender balances (Tyre, 2008). It appears that boys are falling behind their female counterparts, resulting in a gender imbalance that is leaving boys at a disadvantage.

The same trend for boys is being observed internationally. When comparing girls and boys on fourth grade reading performance on the 2001 Progress in International Reading Study, girls consistently outperformed boys across all 35 countries, with an average scale score gap of 20 points (PIRLS, 2001). Among the 25 Organization for Economic Cooperation and Development (OECD) countries, participating in PISA (Program for International Student Assessment), in countries, women graduating from university exceeded the number of men (Whitmire, 2006). The literature on boys' underachievement includes studies conducted in Great Britain, Germany, Australia and even some cross-cultural studies (Clark, Thompson, & Vialle, 2008). While other countries have been attentive to the gender gap, the United States Department of Education has not focused on gender as they have race and income in investigating achievement gaps (Whitmire, 2010).

Purpose of Study

There are many questions around what strategies work to improve boys' achievement. Some encourage the use of boy-friendly classroom strategies (Gurian, 2005; Tyre, 2008) while others advocate for single-sex classrooms and schools (Sax, 2007). What is missing from the research is how to best understand how a boy's classroom experience helps or hinders his development as a scholar. If there are barriers to boys' achievement, then it is reasonable to believe that there are classroom practices that contribute to improved outcomes for boys. The purpose of this study is to explore teacher practices and instructional strategies that increase boys' motivation, and therefore lead to better academic performance. It is intended to provide an examination that leads to a better understanding of the connection between boys, their motivation, and their teachers' autonomy supportive practices.

This study can add to the literature on boys' achievement and effective classroom pedagogy by providing support for effective approaches and their impact on boys' achievement. A great deal of the literature on the gender achievement gap provides information about the gap itself, or potential strategies to improve achievement for boys, but there is little available that describes teachers' interactions with boys and how this affects their motivation and subsequent academic performance. It is unclear in the literature which practices or programs account for improved academic performance for boys specifically from their perspective.

Research Questions

RQ 1: What kind of motivation is evident among boys in grades 7-10 in Math and Language Arts classes (intrinsic, extrinsic, amotivation)?

RQ 2: How do boys' perceptions of their teachers' autonomy supportive practices affect their intrinsic motivation?

RQ 3: What is the perceived difference between male and female achievement and attitudes toward school among male students and secondary teachers?

Research Strategy

Reason for mixed methods. The research questions required a mixed methods study, to both gather data on the correlation between teacher practices and motivation for boys as well as boys' perceptions of their teachers' behaviors, and how this impacts their motivation. Additionally, including teacher perceptions on what strategies work well to support boys' achievement was important. This was a convergent parallel mixed methods study (Bian, n.d; Creswell, 2003). This means that both quantitative and qualitative data

were collected during the same time period (parallel). The convergence, or coming together of the data sets, will occur at the interpretation stage.

A mixed methods study was the most effective way to thoroughly answer the research questions because the quantitative data helped to determine if the data collected in this study accurately reflects the correlation found in literature between autonomy supportive practices and intrinsic motivation while the qualitative data helped to explain the “why” that the quantitative data might fall short in explaining. The qualitative data is especially important within the context of this study because of the small sample sizes. The quantitative data along with the qualitative data provided more data to answer the research questions.

The District

In an effort to explore the challenges of boys’ underachievement, I focused my efforts on an urban-fringe school district outside of Denver, Colorado, USA. I chose this school district because it is the district where I am currently employed. I wanted to study a topic that would have meaningful application to the district after its completion. Additionally, I believed that being an employee of the district would allow me to more easily participate in a collaborative study design with practitioners within the school district. According to Shenton (2004), the background, qualification and experience of the researcher are of importance to the research study. I believed that my understanding of the district culture as well as my positive relationships within the district would ease the collection of data.

In this school district, (which will be referred to as District B for the purposes of this study), there is about a 7% gap between girls and boys in reading achievement according to district T-CAP data from 2014. According to district discipline data in (2015-2016), boys represented 68% of the students who received discipline referrals. 2015-2016 data revealed

that while students with the highest grade point averages across the district seem to represent a more balanced gender distribution, students with low grade point averages (.5-1.5), are disproportionately male (approximately 62%). In 2015-2016, boys represented the majority of students in District B's alternative high school, a school designed for students who are over-age and under-credit. At this school, boys outnumber girls 2:1. It appears that the educational experience of boys in District B mirrors the same patterns observed in the scholarly literature concerning male underachievement.

The research sites. Through a collaborative process with district input, I, as the researcher, chose three schools to consider as sites. The focus of the study was adolescent boys in grades 7-10. This grade span was chosen because the literature describes a decline in intrinsic motivation as students get older (Gottfried, Fleming, & Gottfried, A. W., 2001). Additionally, District B had seen low levels of academic achievement data in this grade level span, particularly in Mathematics. Collecting data for these grades, could help me identify some of the barriers to achievement, as well as classroom practices that are found to be effective.

All three schools are in District B, and all three schools follow the International Baccalaureate (IB) program, school-wide. Two of the schools are new to the IB model, while one of the schools has been an IB school for over ten years. None of the students who attend these IB schools need to pass an assessment in order to be considered for school admission. The only limitations to entrance is if the school is full at the student's grade level, or if a student has an Individualized Education Plan (IEP), and the school does not have the resources to meet the requirements of the IEP.

The schools demographic makeups are representative of the district, with some slight variation. About 60% are Latino, 20% White, 10% other ethnic groups. Approximately 70% of students receive free/reduced lunch. About 40% of students are English learners. The full sample size of the boys in grades 7-10 for all three schools was approximately 250. All three schools in the study represented the diversity of the district.

I met with both school administrators the summer before the start of the research study to explain the study and provide a timeline for the research study. Administrators were able to ask questions and express any concerns. School administrators for all three schools provided me letters granting permission to do the research study at their school sites. This process followed the District B IRB approval process.

Finding Participants

Recruitment. The data collection stage of the research study was held from November 2016 to January 2017. I communicated with school administration around the days and times I could recruit students. For some recruitment efforts, school directors accompanied me, for others (like during lunch/recess), I went directly to students and spoke to them in small groups. During these recruitment times, the study was explained. Assent and consent forms were distributed. At all three schools, similar recruitment strategies were utilized. During the first recruitment, the administration allowed me to talk to students for about five minutes during class time. At one school, administrators took me from class to class to discuss the study. At another school, the boys were brought together in the gymnasium, and I explained the study with administration and teachers present. The second time I went to recruit boys during their lunch time, at all three schools. For the third recruitment effort I went to recruit during lunch time at one school, but the boys were pulled

together for me to address at the other two schools during their afternoon Advisory period. I held focus groups the day after the third recruitment effort at all three schools. Focus groups were held during lunch time. Pizza and soft drinks were provided for the boys. The focus groups ranged between approximately 15 minutes and 23 minutes in length. Of 250 possible student participants, 22 boys participated in both the survey and focus group. 24 students participated in the survey only.

In terms of recruiting teachers for focus groups, I emailed them requesting their participation (see Appendix C). Teachers were asked to join a small group at an identified space and time during their lunch period. Lunch was provided for teachers. Some teachers wanted to participate, but could not join the group time, and wanted to have individual conversations about the research topic. I did not have individual conversations with those teachers to maintain the integrity of the research design.

Classroom observations. I hoped to include classroom observations as part of the research design, but this request was denied through the District B IRB approval process. District administration explained to me that classroom observations might make teachers feel uncomfortable, as if I was judging their classroom practice. Though I hoped to observe interactions between teachers and their boys to glean some understanding about effective strategies, the District would not allow this. School administrators were also sensitive to how much time teachers would be expected to give to support the research study.

Quantitative Data Collection

Information was collected quantitatively through student surveys. A Likert scale survey was created to obtain quantitative information from students, as well as some open-ended questions that provided qualitative information (see Appendix A). The questions for

the survey were based on ideas from literature concerning autonomy supportive practices and intrinsic motivation. For example, intrinsic motivation is defined as doing an activity for its own sake rather than external reward (Deci & Ryan, 2008). Autonomy supportive practices including providing feedback, giving choice, and considering student interest (Reeve, 2006) were added to survey questions. Additionally, questions about directive teacher practices, like not giving students enough time to complete tasks, or teachers pushing students to do work in a way that made them uncomfortable (Assor, Kaplan, Kanat-Maymon & Roth, 2005), were also added to assess how student motivation and academic performance was affected by teacher directive behaviors. Lastly, students were asked about their perception of their own academic performance (their grades, their understanding of academic content) to determine if their responses around their performance were correlated to their responses concerning teacher practices. The survey was divided into two domain-specific subjects (Math and Language Arts) as the literature reveals that student motivation can be influenced by academic subject (Eccles et. al, 1993; Meece, Glienke and Burg, 2006; Spinath, Eckert and Steinmayr, 2014). The survey questions were designed to be easily accessible to adolescent males.

Descriptive statistics were used to learn about the mean, standard deviation and skewness of the data set, as it related to each factor related to motivation and teacher practices. Correlations were conducted to determine which factors might be correlated. T-tests were run on the data to determine if there were statistical significant relationships between the items.

Qualitative Data Collection

The focus group questions were designed to elicit open responses that could provide insight relevant to the research questions (see Appendix B). I purposely stayed away from the phrase “autonomy supportive practices” when talking to the boys and teachers, as this term would not be well understood, and would potentially narrow their responses. For the boys’ focus groups, I avoided the term “intrinsic motivation,” as I thought it was unlikely that they would understand what they meant. Instead, I encouraged them to discuss times when they enjoyed learning, or continued to study a topic for the fun of it, or because it was interesting. The focus groups were designed to elicit free-flowing responses that were not too constricted by my questions.

Focus groups were conducted with boys at each school, separated into middle school (7th and 8th grade) and high school (9th and 10th grade) groups. The boys’ focus group questions were designed as open-ended questions that aimed to understand how boys viewed their own academic performance, what their teachers did that helped them learn, and their perception of their achievement in comparison to their female counterparts. The same student focus group questions were used for both middle school and high school (see Appendix B). There was an intention to interview boys whose focus group responses peaked some interest. However, after conducting the focus groups, I was confident that the responses provided were adequate, and no further or deeper responses were likely in a one-on-one interview setting.

Additionally, focus groups with teachers were conducted to assess their understanding of the gender achievement gap, as well as hear about the strategies they believe work effectively to improve the achievement of boys. I gathered teachers’

perceptions of the gender gap, and elicited their responses around what strategies they use to engage all of their students, but boys in particular. The combination of student surveys and focus groups provided quantitative and qualitative data to analyze trends that are evident in District B among adolescent boys.

Focus groups were audio recording and transcribed. After transcription, the focus groups were coded using *a priori* coding and emergent coding approaches. Three focus groups were conducted with teachers: one middle school and two high school groups. Three focus groups were conducted with adolescent male students: two middle school and one high school group. The original intent of the research study was to hold eight total focus groups rather than six, but at one of the research sites, one group of high school boys and one group of middle school teachers did not have any participants.

The focus groups were audiotaped and transcribed. The following table provides a list of *a priori* codes as well as emergent codes (see Table 1 below). Dedoose (<http://www.dedoose.com>), an online research support system, was utilized to support the coding analysis. Codes were distributed among several focus groups, with some codes found among several student and teacher focus groups. Appendix F demonstrates the distribution of codes among focus groups and survey short answer questions. (Codes that were only coded in one focus group were eliminated). Theme creation occurred by combining codes that were connected, in addition to reviewing the research question for relevance. Codes and themes that did not seem directly relevant to the research questions were identified as first iteration codes (see Appendix G). Triangulation of data sources between teacher focus groups, student focus groups, and student short answer questions was used to confirm themes in the research.

Table 1

A Priori and Emergent Codes

A PRIORI CODES	EMERGENT CODES
Boys	Boys
<ul style="list-style-type: none"> • Activities that are intrinsically motivating • Academic performance in school 	<ul style="list-style-type: none"> • Learning styles • Academic content • Lack of motivation • Sports, PE, Physical Activity • Grades that are good • Food as motivator • Domain-specific motivation • Having fun • Differences between boys and girls • Boys less organized • Brain differences by gender • Learning differences by gender • Boys-more ADHD, behavior, IEPs, learning plans • No gender difference in learning • Girls more motivated academically • Identifying strong academic performance
Academic Content	
<ul style="list-style-type: none"> • Motivation based on subject • Future 	
Teacher Actions	
<ul style="list-style-type: none"> • Effective strategies • Choice • Academic Feedback from teacher • Relationship with teacher • Encouragement from teacher • Other teacher practices • Strategy: girls vs. boys 	
Peers	
<ul style="list-style-type: none"> • Peers as academic encouragement • Student off-task behavior • Student defiance • Student distracted by peers • Other student behaviors 	Teacher Actions
	<ul style="list-style-type: none"> • Collaborative Learning • Competition • Clear Purpose • Explaining in multiple ways • Short-term goals • Active Learning • Boys interests (connecting to)
Family	
<ul style="list-style-type: none"> • Parental support • Importance of pleasing family 	
	Peers
	<ul style="list-style-type: none"> • Role models for males • Other peer influence • Reasons for low academic performance • Family
	<ul style="list-style-type: none"> • Family members, own children • Live better than parents
	Future Orientation-graduation

Limitations

My role in the district. Initially, the largest limitation to this study was thought to be my role as a leader in the district and working in the central administration office. The district was particularly concerned that this would impact my interactions with teachers, administrators and some students and asked for additional assurances so that no group would feel obligated to participate in my research study. Though this was a major concern when the study was approved, I did not find this limitation to be an area of noteworthy concern during the research study. For example, teachers seemed willing to participate, but did not appear to feel any sense of pressure. Most of the teachers and paraprofessionals invited to participate chose not to.

Obtaining consent forms. What became the most significant limitation was obtaining the consent forms from boys. This limitation resulted in a small sample size of 24 total male student participants out of about 250 potential participants. I explained that the study was optional, and that their grades would not be in anyway affected by their participation or lack thereof. Additionally, boys did not have any personal relationship with me, so I think participating in the study felt indeed like an option; an option that most boys chose not to participate in. Given that the study was performed at only three schools in one school district, the study will not be generalizable in its current form, though I believe it could be replicable.

Generalizability. The study was designed specifically to be of usefulness to the school district, which does not make it directly generalizable. Many teachers took an interest in the study, even if they did not participate directly, and told me they were interested in the results. Their response and support makes me feel confident that there is interest in the topic

of boys' achievement, and the recommendations may find their way to implementation in the schools identified, and hopefully to more schools throughout the district.

Ethical Considerations and Bias

My understanding of the busy school environment influenced when and how I communicated to school administration and teachers, as well as the scheduling of recruitment and focus groups. Though this understanding and familiarity aided my data collection efforts, I was also careful to ensure that my familiarity did not too heavily bias the results. Given my relationships with members of these school communities, I carefully communicated the intentions of the study. I was careful not to use my administrative role to coerce any participation. I believe this approach worked successfully, as the teachers who I had relationships with and I thought were most likely to participate chose not to participate in the study, even though they were middle and high school teachers at the schools identified. This confirms that teachers probably felt free to participate or decline to participate in the study.

Researcher Bias. One of my biases is that boys' underachievement is not a result of their own deficiency, but the result of a system that has become more slanted toward females. Schools have moved more toward knowledge-based learning and away from experiential learning (Sax, 2007) which I believe disproportionately affects boys, who often learn better through movement and experience than sitting quietly listening to an instructor. Additionally, school has become more literacy-based and verbal, which is more difficult for many boys who are slower to develop skills that support literacy and verbal processing (Whitmire, 2010). Furthermore, classrooms are mostly led by women, (Mortenson, 2013) and in more recent history, the slight majority of K-12 schools are led by women ("School

Administrators,” 2014). This has contributed to an emphasis on collaboration as a high value in opposition to competition (Sax, 2007), which disproportionately works against some boys. While I am not anxious to return to the “good ol’ days” when gender stereotyping was culturally accepted, I want to advocate for an equitable school system that values the contribution of all people, and provides structures to support the development of scholarship in all its members, both male and female.

In terms of teacher practices in classrooms, I have a bias that autonomy supportive practices are better teaching strategies that yield stronger academic performance than directive practices. Autonomy supportive practices are about giving students’ choice, providing them constructive feedback and believing in their ability to be successful (You, Dang, & Lim, 2016). It is not about letting students govern their own learning at the expense of any academic direction or facilitation. I feel strongly that the classroom needs to be structured to maximize learning time. However, this structure should facilitate and enhance learning, not serve to discourage student autonomy and creativity. This study is not about student “freedom” as much as it is about the autonomy to grow as a learner within a supportive, encouraging, rigorous classroom environment.

Reliability

The survey questions were designed from concepts derived directly from the literature. Furthermore, I piloted my survey questions with three boys outside of the sample, (2 students were in 9th grade and 1 was in 10th grade). The boys had an opportunity to provide feedback on the questions, and what they believe was being asked to test the content validity. Survey responses were run through descriptive analysis. Averages were taken of dependent variables that influenced intrinsic motivation, autonomy supportive practices as

well as teacher practices associated with decreasing motivation in students. Cronbach's alpha showed that the survey is very reliable with an alpha of 0.90. This indicates that students answered consistently across all items.

Trustworthiness

In reference to validity and reliability, as it relates to quantitative research, Shenton (2004) discusses the importance of trustworthiness for qualitative data. In referring to the criteria established by Guba (1981), Shenton (2004) discusses the importance of credibility, transferability, dependability and confirmability in strengthening the trustworthiness of a qualitative research study. In light of that criteria, this section will briefly describe the trustworthiness of this study.

Credibility. Commonly used research methods were utilized in this study. As the researcher, I had a familiarity with the culture of the organization, which served as a strength in cultivating trust with research sites. Triangulation was used to establish themes across data sources, including teacher and student focus groups at different school sites, as well as short answer responses from survey questions. Focus groups were held in confidential classroom spaces, limited to participants during lunch time. The focus group questions were based on concepts taken from the literature concerning intrinsic motivation, autonomy supportive practices as well as perceptions of the gender achievement gap. The questions were designed to address the research questions directly.

Transferability and Dependability. Transferability refers to the degree to which a research study can be replicated under similar circumstances (Shenton, 2004). It also refers to the degree to which the researcher was transparent in describing in detail the context of the study. Dependability is the extent to which research methods and decisions were reported

precisely by the researcher to ensure that the reader can use the study as a “prototype model” (Shenton, 2004, p. 71). For this study, I, as the researcher, provided a precise description of the sample, the district, schools included, the data collection methods as well as the time period for data collection (Shenton, 2004). This helps to enhance the dependability of the study.

Confirmability. I was conscious of my role as the researcher as well as a district employee, in an effort to reduce the inevitable bias (Patton, 1990). My conscientious effort to reduce bias, be objective and let the participants speak for themselves serves to support the confirmability of the study. Furthermore, according to Shenton (2004), an “audit trail” should be available to the reader, which provides a detailed description of research decisions made during the study. The specific research decisions made are detailed in this study. This helps to affirm the confirmability of the study. To summarize, the trustworthiness of this study is evidenced by its commitment to the criteria established by Guba (1981) and discussed by Shenton (2004).

CHAPTER III

RESULTS

This chapter will provide an analysis of the results of the study, including both datasets: focus groups and survey. The analysis of the results was conducted separately, therefore the chapter will be split between qualitative and quantitative analysis. The qualitative data collected was primarily from focus groups conducted with students and teachers. However, the surveys included a short answer question that will be included in the qualitative analysis. The quantitative data analysis will include descriptive statistics as well as correlations found between variables. Chapter 4 will demonstrate the findings through the interpretation and triangulation of research questions.

Qualitative Analysis

Sample. The sample included 24 male students and 18 teachers of middle and high school students. The students and teachers came from three different schools in District B. 22 of the 24 students participated in focus groups; 24 students participated in the survey. Three middle school teachers and one middle school principal participated. Thirteen high school teachers and 1 high school principal participated.

Table 2

Student Sample

Grade Level	Number of Student Participants
7	6
8	6
9	4
10	8

Codes into themes. *A priori* codes were determined prior to coding focus group transcripts. Emergent codes were identified during the coding process as themes emerged in the transcripts. According to “Tips and Tools,” (n.d.), “The rule of thumb for coding is to make the codes fit the data, rather than trying to make your data fit your codes.” For this study, as the researcher, it was important that I permitted emergent codes in addition to the *a priori* coding to allow for the data to determine the necessary codes. From these codes, themes were developed as the codes were identified across student and/or teacher focus groups. Several codes did not emerge into themes in the study. These codes are referred to as first iteration codes, and are listed in Appendix G. Dedoose, an online research support system, was utilized for transcript analysis through coding. Codes were revised and excerpts were reviewed to ensure that codes matched excerpts appropriately. A second rater through a reflexive inter-rater approach reviewed transcripts and confirmed excerpts within each code. Additionally, charts from the Dedoose system were reviewed to analyze coding themes.

The following section will detail the major themes found in the qualitative data collected, as well as minor themes that emerged. Each short section will include a description of the theme, as well as its meaningfulness to understanding boys' motivation and academic achievement. Literature will be referenced when it confirms themes discovered. In some cases, boys' perceptions and that of their teachers were similar, while in other cases they were quite different.

Boys' Motivation

Though the research questions focus on the difference between extrinsic and intrinsic motivation, most of the focus group conversations between teacher and students focused on motivation and academic success in school. Rather than spend time on debating what motivation was intrinsic or extrinsic, I focused on motivation and learning; particularly what strategies or experiences students and teachers thought had the most positive impact on the academic experience for boys. I found this approach to be fruitful, as it naturally revealed boys' motivation, as well as what strategies teachers thought were most useful in supporting academic success.

Physical Activity as Motivator. In considering activities that boys found motivating, across focus groups, physical activity emerged as something boys enjoyed and were thus motivated around. Whether it was organized sports, physical education, being active in the classroom or on the playground at recess, there was an emphasis on physical activity. Soccer, skateboarding and football were all mentioned in focus groups as motivators, even if they supported students by providing motivation in school. According to Kohl & Cook (2013), physical interventions were found to have a positive relationship with academic achievement for small groups of peers.

~ High school student: "I always seem to be working hard in soccer... it motivates me a lot and, it's kind of like a pain reliever, stress reliever."

~ Middle school student: "So like my physical education class.... I just like how we're always being active, and that's like, how I learn the best."

Real-life work. Another area of physical activity that was identified across focus groups was real-life work. Three different students across two focus groups mentioned that they enjoyed working. This seemed consistent with one teacher focus group that discussed the importance of relevance and purpose to student learning.

~ Middle school student 1: "Last year, we were working on a roof, and we had to work really hard because it was the first time I ever got paid for doing something."

*~ Middle school student 2: (In response to what activity he considers interesting)
"Working tile."*

During the focus groups, when students were asked about situations where they wanted to continue a specific activity for the fun and interest of it, students referred to activities that were outside of regular academic content. However, through the survey, when students were asked about things that motivated them in specific content (Math or Language arts), a few students referred to academic content, though most students referred to other motivators. Of the 24 responses, 4 of them focused on academic content. The following quotes about academic content were taken from the survey short answer questions:

~ Survey Short Answer (English): "The things that make me exited [excited] are the books we read."

~ Survey Short Answer (English): “The books we read.”

~ Survey Short Answer (English): “When we do our space project that makes me excited because I like reading about space.”

~ Survey Short Answer (Math): “She gives us like a packet of number cards and we are with a partner and we have to say positive or negative. Then we add or subtract, it is a game. It is fun.”

The other responses to the question of what motivates them in Math/Language Arts included graduation, building a good future, or earning good grades; all of which could be considered extrinsic motivators. It is worth noting that student concept (a belief that a student can be successful) is important for achieving future goals (Wilson, Siegle, McCoach, Little, & Reis, 2014). Furthermore, Koumi (2000) argued that students distinguish a learner self-concept from a student self-concept, the latter having an effect (albeit small) on their perception of their ability to achieve future goals.

Food as Motivator

In considering other motivators that initiated academic performance or engagement in school, food came up as a motivator in three of the six focus groups.

~ High school teacher 1: “Almost any ninth or tenth grade boy will do whatever you want if you buy them lunch.”

~ High school principal: “But it’s gotta be a pretty instant reward, uh, and food, not pop, not chips, but a whole lunch is a pretty big motivator for ninth and tenth grade boys.”

~ High school teacher 2: “The few students that I saw who tend not to do the other assessments like, in Spanish 3, did the food assessment.”

Teacher perception of food as a motivator found some credence in one of the middle school focus groups:

~ Middle school student: “Um, sometimes in class, I like start daydreaming, and when people start asking me why I’m daydreaming, I had to tell them it’s not like anybody, it’s the food, ‘cause I just love food.”

Food provided at the focus group provided some incentive for students to participate; they were appreciative and told me so repeatedly, whether it was directly thanking me for providing the pizza and pop, or simply expressing gratitude. Store-bought pizza and pop are not provided in the school cafeteria as part of their daily lunch. For one of the focus groups, five middle school boys managed to devour four large pizzas. At the other middle school focus groups, I observed one boy who managed to carefully pour his remaining pop in an empty water bottle to take with him to class. It was clear that providing a special lunch was enjoyable for the students. Though food is not identified as a major motivator in the literature, it may have had the short-term effect of getting the boys to participate in the focus groups in this study.

Grades and Graduation as Motivators

Grades were mentioned as a motivator in the short answer surveys when asked specifically in reference to academic content:

Q: In your Math class, what are the things that motivate or make you excited about learning? (Please answer in your own words).

Four out of 24 respondents referenced getting good grades in response to this question.

Q: In your English/Language Arts class, what are the things that motivate or make you excited about learning? (Please answer in your own words).

Three out of 24 respondents referenced good grades in response to this question. Graduation was also mentioned as a significant motivator in response to the survey short answer question focused on Math mentioned above, though this response was concentrated among 10th grade respondents. Of the 10th grade respondents (8 of the 24 students surveyed), 3 mentioned graduation as what “motivates them.” It appears that students (particularly 10th grade) had a strong future goal orientation toward graduating from high school.

Differences between boys and girls in school

Adding research question 3. Research question 3 was added to the research study after I realized how much insight research participants provided concerning their perceptions of gender differences in academic performance. My literature review related to this study provides research about the gender gap and my original intention was to utilize this to provide context for the research study on boys’ achievement. What I discovered through the focus groups is that teacher and student perceptions about the gender gap were worth noting.

Differences in brain development by gender. Gurian (2005) describes gender difference in brain development, and how these differences may impact learning. Across all teacher focus groups, it was mentioned that boys and girls have differences in brain development, with boys maturing more slowly. This slower maturation in boys seemed to be attributed to both academics and social-emotional development. Additionally, teachers mentioned that more boys presented with Attention Deficit Hyper-Activity Disorder (ADHD) and had more Individualized Education Plans (IEP). In one middle school focus group, two boys admitted freely that they had

ADD/ADHD. Though teachers were aware of this gender difference in the larger society, they were not always sure that their specific classrooms demonstrated the same gender gap noted in the literature.

What did seem more conclusive among some teachers is that boys expressed more negative behavior than girls. This was acknowledged as a larger trend that was often confirmed in their own classroom experiences. However, the boys who participated in focus groups did not make note of this behavioral difference for the most part.

~ High school teacher 1: "Freshmen boys coming in, they typically are gonna find a level maturity until maybe mid-way through their tenth grade year."

~ High school teacher 2: "Well, structurally their brains are totally different, I mean, males have been proven scientifically not to develop nearly as fast, so the concrete portion of their brain doesn't, solidify, not until they're like 30."

~ Middle school teacher 1: "I see a difference when, in like, how much they write.... but also, know that, there's already, there are differences in brain too that you can account for some of that, not to overgeneralize."

~ High school teacher 3: Male children, end up having a lot more externalizing behaviors, uh, and so, that usually comes out a little bit more so in males than females.

~ High school teacher 4: "I have more resistance from my male students."

~ Middle school student: "Most of the girls, in our grade, are usually, getting low grades, because they're kinda like the drama queens....so they're always trying to hurt people or, just trying to talk back to the teachers."

Boys in the focus group, both middle and high school, didn't mention any major differences between their development and that of girls. Unsurprisingly, no boys mentioned that girls seemed more matured, or more academically or emotionally developed. However, teachers were quick to note the differences in academic performance between boys and girls. Boys were identified as less concerned with their grades than girls.

~ High school teacher: "I saw a gap between males and females, usually the females in my classroom were performing a little better than the males."

~ Middle school teacher: "Girls seem to be more willing to advocate for themselves and do the things that need to get done, um to bring their grades up...boys just...aren't really stepping up to the plate as much as the girls.

[referring to the attitude of boys who are getting failing grades] Whatever. I'm failing. Cool."

Teachers also mentioned that girls seemed to be more motivated around academic work habits and attentiveness in school, while boys didn't seem to put in the same amount of effort. Additionally, some boys seemed to notice this trend as well.

~ High school teacher 1: "I have to be on my male students to turn in stuff, a lot more than female students-- they know what their job is."

~ High school teacher 2: "A lot of times the girls will really, they're just real meticulous about, um, projects, I mean as far as that goes, and a lot of the boys will just try to like, you know, throw it together, so as far as creativity goes, and achievement, um, I'd say, females will take their time a lot more than the boys will."

~ Middle school principal: “Do boys question more about the system and ‘why should I be a part of it and do this, I don’t care about this topic, I’m never gonna use it when I grow up,’ but girls don’t question it as much, I wonder.”

~ High school student: “They [girls] just seem to care more sometimes.”

~ Middle school student: “Oh, It seems like any classes I go, I see the girls are actually doing their grades and they’re usually on task. And they girls who are not on task, they still get good grades. But like, if a boy like, like, if I get off task for like five minutes, I’m lost and I can’t....”

Boys were not only perceived as being less attentive or less likely to complete work, but also less organized. This was a particularly significant theme among high school teachers at one school site, though also mentioned by students.

~ Middle school student: “When you leave some one thing that was due yesterday, and you leave it do the next day after it was due, you just get confused with all the other stuff you have to do.”

~ High school teacher 1: “In advisory we do.... planner checks, and all my females to this day, still have their planners, and I would say less than half of my males still have their planners.”

~ High school teacher 2: “I don’t know what it is, that they do not have that special skill to be organized and to keep on top of things, and say, I need you to turn in this work and, I don’t know what it is, and personally as a mom, I see that on my son, my son is seventeen, and he’s a complete mess, I have to be on top of things, for him to say, did you turn this in, and I know that I’m not a helicopter

mom, but in a way I am, because if I don't do that, he would be a mess right now in high school."

~ High school teacher 3: "It really depends on the individual, um, because I have a few boys who are more organized than the girls."

~ High school teacher 4: "I think it also depends on like their personality, like...a bunch of kids, like, boys in the class are like, they're good, they're really smart, in the class and successful in the class but they just don't have an organization system."

Interestingly, though there was much discussion about boys and girls and how their differences manifest in the academic context, several boys and some teachers could not clearly identify a gender gap, or differences in achievement based on gender in their own school experience.

~ Middle school student: "I think we're all the same, you know like, we just all learn differently, like, slower or faster, like, we're all gonna get it at some point, like, some people get it right away, and some people don't. Like, I take this as like little like, some people learn how to walk faster than others, and, yeah."

~ High school student: "I think we both have, we both do have the mentality, and the ca, ca ? capacity (several in the group respond with the correct word) capacity, to do good, it's just that it depends on you and how much effort you actually try."

~ High school teacher: "I have seen a lot of, of parody in my students between the achievement between boys and girls."

~ High school teacher: “I can’t really differentiate every moment where the boys are excited and the girls aren’t, or when the girls are excited and the boys aren’t.”

~ Middle school student: “We all mess around...”

Many teachers acknowledged specific differences in academic performance between their male and female students. However, for other teachers, it was unclear whether the gender gap was noticeable in their own classroom experience, even if they could acknowledge a larger trend elsewhere. Some boys could make note of some difference, but most of the boys did not seem to think there was any significant difference between girls and boys in their classes.

Future Orientation

Within the context of this study, future orientation is referred to as the degree to which students pointed toward a future goal as their motivation for working hard in school. Separate from getting good grades, this referred to mention of their future; graduating from high school, going to college, getting a good job, or pursuing a specific career path. When asked the reasons why they perform well in school, many boys referred to their future. They said that they performed well in school because they wanted to have a good future. This was found consistently among both high school and middle school boys. Even when asked what makes them motivated or excited in specific content subjects (English or Math) boys still often responded that their commitment to having a good future is what motivated them.

Q: In your English/Language Arts class, what are the things that motivate or make you excited about learning? (Please answer in your own words).

~ Survey Short Answer: "Once again what motivates me is graduation."

~ Survey Short Answer: "The thing that motivates me is also my future."

~ Survey Short Answer: "To get an art career."

In response to a question about the reasons he performs well in school, one student said the following:

~ Middle school student: "Future, 'cause right now it might not be important, but like in the future, when you want a good a job..."

When teachers made reference to future planning as it pertained to their male students, it was found in a significantly different context. In a focus group with middle school teachers, two teachers referred to girls as seemingly more focused on their future than the boys:

Q: (Teacher Focus group): What do you know (or what have you heard) about achievement between boys and girls?

~ Middle School teacher 1: "More girls know where they want to go rather than boys."

~ Middle School teacher 2: "Some of them [boys] just don't see the connection between what they're doing now and what that has to do with what they want to do."

While boys often referred to their future as a source of motivation, teachers did not reference the future as a source of motivation they observed among their male students, and some thought that their female students were more intentional about planning for their future.

Family

The importance of pleasing parents was a major theme found, particularly in the high school focus group, but also mentioned in one of the middle school focus groups. Many high school students when asked why they perform well in school said “my parents.” However, their tone was one of “pleasing, for the benefit of,” not, “they’ll kill me if I don’t.” My interpretation as the researcher is supported by some additional comments heard from members of student focus groups:

~ High school student 1: “I’m also going to do it because I promised my dad that I was going to finish high school.”

~ High school student 2: “I keep my grades up because like, I want to one day be able to like take care of my family and support a family.”

There was an emphasis on making parents proud. According to Cattanach (2013), within Latino families, how a child performs in school is largely based on family and other outside influences. One student said he wanted to do “better” than his parents. In response to being asked why he performs well in school he said:

~ High school student: “I do it for my loved ones, and to have a good future, not struggle with like, any problems that I see my parents struggling with.”

In response to the same question, another mentioned:

~ High school student: “I want to do it, because I want to be the first one in my family to go to University, and I also want my kids to be born in a house that’s all paid for.”

Parental support. Though teachers did not necessarily echo this same sentiment, there was a great emphasis on the importance of parental support in one of

the high school teachers' focus group, which could echo the importance of schools with increasing Latino populations capitalizing on the importance of parental support and engagement (Cattanach, 2013). One participant in the high school teachers' focus group shared some unique insights about the Latino culture specifically:

~ High school teacher: "The other thing with this culture, is um, the father figure... you can call the mom and say he's not doing his homework, he's doing this, he's doing that, the minute you say, I'm going to call your father, they're like, 'whoa, whoa, whoa, hey, hold on, let me fix this,' ...I've noticed that specifically with this population it wasn't as much in other populations, but the father, really, really makes a big impact with these kids. Or if you call a dad and tell a father that there child is doing well, it really really makes a big difference."

Another participant went on to discuss the importance of parental support, and how it is important for student achievement. Interestingly, the role of parental support and its impact on achievement was not mentioned as a factor among student focus groups. In student focus groups, parental support was only mentioned as a possible causal factor for students whose achievement was low (if parental support was lacking).

Boys' Reasons for Underachievement

In an attempt to understand boys' perceptions around poor academic performance and low achievement, the following question was asked during the student focus groups:

Q: Think about other kids you know who are not doing well in class. Why do you think they are not doing well?

Students' responses to this question could be placed in four major categories: distracted/not paying attention, lack of care/motivation, parents/home, bad peer influences. Here are some quotes from student focus groups that represent the four categories:

Distracted/Not paying attention

~ Middle school student 1: "Cause they mess around a lot and they talk, and they just, screw around, and they don't do their work, like their homework, and just, leave everything til' the end."

~ Middle school student 2: "Um, they always on their phones, they never really pay attention, they're always talking."

Lack of Motivation

~ Middle school student 3: "They don't try hard enough."

~ High school student 1: "When I used to get horrible grades and be bad I usually faced like, problems that, I didn't see myself moving forward, I just didn't care about what anyone thought, I just like, didn't care about school or nothing and now that I'm like, pushing myself, I feel more confident in what I do, everything else."

~ High school student 2: "Yeah, sometimes people also think they're not smart enough but I think the only way that happens is it's kind of their mentality like when they can't overcome something, they just think it'll be easier to not try to do it, and then they just keep telling themselves and telling themselves that they can't do it and they'll end up believing it and not believing anything else."

Parents

~ Middle school student: *“Their parents, probably don’t care what they really do, so they just let them do whatever.”*

~ High school student: *“Their parents give them everything and they never like, try to earn anything so, in school I guess they believe that that’s how the world is gonna be and then they’re just gonna be lazy and everything’s gonna go alright for ‘em, and that’s not how it works, they’re gonna like (hand motion of dying) they’re gonna go homeless.”*

Bad Peer Influences

~ High school student 1: *“Going back to the friends issue....surrounding yourself with bad people, like, you know it’s not right, but you just wanna be, like you just wanna feel part of the group, part of the, just around friends....”*

~ High school student 2: *“Sometimes you have to have friends that uh, don’t care about school and just wanna, joke around, things like that and you think it’s right, and you do it with them.”*

~ High school student 3: *“Also friends, that could be in that class distract you, and you just do it with them.”*

It is worth noting that none of the students said that students weren’t smart enough to do well in school. They attributed the low achievement of students to outside factors (family, bad friends) or things the student could control (paying attention, not messing around, changing mindset).

Role Models and Peer Influence

The idea of role models and the importance of having positive adult male role models emerged in two teacher focus groups.

~ Middle school teacher: “I wonder if role-models have a big part of it, like I feel like some boys have certain role models and they’re really influential.”

~ High school teacher: “If we could find a group of men out there, especially men of color, who could be a positive influence, and come in, and mentor the students, I mean, like once a week or something, then that would be wonderful, even for the females.”

The boys themselves did not mention role models, or a desire for mentors. But they did reference their teachers as having a positive influence on their academic performance, indicating that positive feedback from teachers might be of importance to students.

The male students did reference their peers as academic encouragement, in contrast to the literature, which often emphasizes how boys hold each other back academically (Van Houtte, 2004). This theme was particularly prevalent at the high school focus group, and mentioned at one of the middle school focus groups.

~ Middle school student:” People look up to you.”

~ High school student 1: “A lot of them, I mean, I try to surround myself with people that want to do good, and that always kinda want to push themselves, and if I’m ever kind of slacking and I see them doing good, I said, I should be doing that too and it kind of...it gets me going.”

~ High school student 2: “My friends really help me out because I struggle with reading or spelling, and sometimes I, I don’t feel like doing it, or like quitting, and they help me.”

Students at the high school focus group also acknowledged negative peer influence:

~ High school student 1: “Some people, they just wanna fit in with the cool kids, cause like, people who try to be cool like they don’t really care about anything.”

~ High school student 2: “Going back to the friends issue, it’s like, like he said surrounding yourself with bad people, like, you know it’s not right, but you just wanna be, like you just wanna feel part of the group, part of the, just around friends...”

Students seemed to acknowledge the importance of peer influence, whether it was positive, and encouraged them excel academically, or whether it had a negative influence on their academic performance. Either way, it mattered in terms of how they performed academically.

Teacher Strategies and Student Motivation

During the teacher and student focus groups, when I asked teachers and students what strategies they thought worked well to engage or motivate, they mentioned several strategies, but more importantly described teacher “approaches” rather than strategies. The importance of the teacher’s approach is confirmed by Hattie (2013), who argues that successful teaching is much more about how teachers approach teaching and learning than it is a list of strategies proven effective. The following section discusses a combination of approaches, strategies, and classroom activities that male students and teachers found motivating to adolescent boys.

Knowing your students. Teachers placed strong importance on relationship-building and knowing their students. This was described as getting to know what students' interests were as well as treating them with kindness. Teachers seemed to think that having a positive relationship with a student enabled them to leverage that relationship to encourage academic progress. In a study using a meta analytic approach, it was found that strong teacher-student relationships showed a medium to large correlation with student engagement, and a weaker, but still statistically significant relationship with student achievement (Roorda, Koomen, Spilt, & Oort, 2011).

~ Middle school teacher 1: "You know who they are and what they're interested in, and what they like, I think sometimes that makes a huge difference with how they perform."

~ Middle school teacher 2: "They're males, yet, those same students are the ones who will stay after class and ask me if I'm proud of how they tried that day, and thinking about that it's only male students who have stayed after to ask me that question. Yeah, interesting."

~ High school principal: "It's a relationship....teachers play on that a lot, like I need you to do this for me, or you know, even saying you're disappointed in them, to a student that means a lot if you have a positive relationship with the student, and so, basing it off your relationship, the student will want to do it so that you continue to have that positive relationship where you think highly of them."

~ High school teacher: "Whether that relationship is, is shown through the compassion that the teacher has toward the particular setting and like of the

student, uh or, whether it's the relationship which enables that teacher to really hold that student's feet to the fire, if you've built the relationship, that student is going to, to do their best to do what you've asked them to do. And if that is, get your homework in on time, they'll actually try and get their homework in on time."

Teachers emphasized the importance of building positive relationships with students, particularly at one of the school sites.

Encouragement and Feedback. There was little distinction made between encouragement from teachers and academic feedback. The lines seemed blurred, both by teachers and students. There was little focus on the quality of academic feedback, and more emphasis on the positivity of feedback. Teachers and students emphasized that encouragement from teachers seemed to bolster student performance.

~ High school teacher: "If you give them feedback like you did a really good job on this quiz, you know, and it's not back like two weeks later and things like that, that means a lot to them."

~ High school student: "If you get good grades like they see potential in you, and they're gonna like try to push you forward, so you can do...at your full potential."

~ High school teacher: "When they're really into somethin', you gotta know 'em, and you encourage it, not like that's not what we're doing right now, but hey, you love to build, we can bring that into your writing. You love, whatever, you just have to know 'em and instead of saying no, say 'how can we make that okay.'"

~ Middle school teacher: “Some boys haven’t heard positive things, they’ve heard you’re a disappointment, you’re a failure, you’re not gonna graduate, and you know, what is it that I can tap in to.”

Student GLA: “They try to teach, uh, a different way, like if we don’t understand it one way, they try to show it a different way, to see if we understand it like that or something else.”

~ Survey Short Answer: “Things that motivate me are her kind words to help me.”

Both teachers and students alike valued the importance of teacher encouragement and feedback. Though the feedback was more praise than academic feedback, both teachers and students discussed it as being important.

Meaningfulness and Purpose. Teachers emphasized the importance of being able to explain the content in a way that was relevant to students, so they would deem it purposeful. Teachers emphasized the importance of relevance in academic study, and described the absence of such relevance as demotivating. Students seemed to emphasize the positive, by talking about teachers who provide context and emphasize the importance of learning the content.

~ High school teacher: “It has to be meaningful, because we have a lot of smart kids, and they’re like....why do I have to turn in homework, when, I can pass the test?”

~ Middle school student: “They make us feel a way that will give us reasons to learn, like, they tell us, ‘if you don’t listen, you don’t learn,’ and like, that’s up to us.”

Meaningfulness and purpose were identified as motivators for students both in teacher and student focus groups.

Competition. Competition was mentioned in all of the teacher focus groups as a strategy that was deeply appreciated by their male students. Though competition is often discarded as a strategy in favor of collaboration in education, (Kohn, 1992), the teachers in these focus groups said that their male students responded enthusiastically to a challenge. Interestingly, the competition described often referred to team activities, where students were competing in groups, in contrast to activities where individual students are pitted against each other. This could perhaps be considered constructive competition (Ali, 2010).

~ High school teacher 1: "I did notice that a lot of the boys are very competitive, so sometimes we'll play like learning games or review games and they'll get into it."

~ High school teacher 2: "Anything that I do like surrounding a competition, it's like, they're so into it."

~ High school teacher 3: "Their memories from something they did as a competition, they can recite things just like that (snaps fingers) if it's a competition."

~ High school teacher 4: "I also try to tap into their sense of competitiveness, so I'll pit like three boys against each other and I'm like whoever out of the three of you scores the highest on this test, I'll get you carne fries."

Competition was identified as a method that produced higher levels of engagement for boys. Interestingly, boys did not specifically reference competition as something they look forward to or find important in the learning process.

Learning and Movement. Learning was described as most effective when students were in motion, or given opportunities to move in between times of uninterrupted focus. Teachers across focus groups agreed that it was important to keep male students active in their learning experience. It appeared that students needed time within the classroom for movement, as well as learning activities that included movement and hands-on experiences. This is consistent with Sax (2007) who encourages movement and experiential learning to help keep boys engaged. According to a study by Pinzon, Vega and Sanchez (2016), results showed kinesthetic learning to help surgeons learn and improve the performance of a task. Movement was identified as a way to keep boys engaged and motivated in learning.

~ Middle school student: "If we do like a play, not a play, but like a, like um, in social studies, the way we, I don't know, when we do like, little skits and stuff, then I think I learn more like that if I'm in it."

~ High school teacher 1: "I have students that, when they can like walk around the classroom and do things, they can focus so much better."

~ High school teacher 2: "Brain breaks...."

~ High school teacher 3: "Having like skits....I did a summative once where they had to do like a dance to show how the solar system was formed and they all participated."

Summary of Qualitative Themes

Several themes emerged from the qualitative data collection that provide insight into boys' motivation as well as autonomy supportive practices that teachers employ to motivate their students. It is clear that boys felt that their commitment to a good future was a clear motivator in helping their academic performance. Furthermore, they enjoyed active learning and opportunities to learn through movement. Serving as a model for their peers and families emerged as important. Teachers strongly believed in the importance of relationship building, and making the learning process meaningful and relevant for students. In addition to the themes mentioned, other ideas were mentioned in focus groups, including the importance of teacher humor, social-emotional needs of students, and collaborative learning. These codes were eliminated because they were identified as first iteration codes. They were not mentioned by more than one or two participants (see Appendix G for more information).

Quantitative Analysis

This section will provide an analysis of the survey instrument used with the sample of adolescent boys. No data from teachers was collected for the quantitative part of the research study. The survey was designed to collect data from students on their perceptions of their own motivation in Math and Language Arts, as well as their teachers' behaviors that contributed to their motivation. (See Appendix A for the survey instrument). It will begin with a brief description of the sample. It will then move on to describe what was discovered through descriptive statistics of the survey items. Lastly, it will describe the moderately positive correlation found between intrinsic motivation in boys and teachers' autonomy supportive practices.

Sample. The sample for the survey included 24 adolescent boys in grades 7,8,9 and 10. The boys attended three different schools, all within District B. There was participation in the survey across grade levels with the largest participated from 10th grade (8 boys). In 7th grade, 6 boys participated. In 8th grade, 6 boys participated. In 9th grade, 4 boys participated, and in 10th grade, 8 boys participated. The sample was determined by the boys who turned in consent forms. Those who turned in forms were included in the sample, with the exception of two boys at one school who did not participate; one because of incomplete consent forms and one who could not be found in school during lunch time when the focus group was being held.

Irregularities in Data Set. There was some missing data in the data set. One student did not answer three of the questions for the English/Language Arts survey related to intrinsic motivation. This resulted in a sample size of 23 rather than 24 on those three items. One student left the question about what kinds of grades he earned blank. When asked if students were taking both English and Math, one student answered that he was not. However, he went on to answer all of the questions related to English and Math class. It is likely that the student answered incorrectly by accident. However, even if he was not currently in English and Math, it is likely that he has experience in both courses. For this reason, and the small sample size, I decided to include his responses in the data set.

Creating grouped items. Items were grouped together based on intrinsic motivation, autonomy supportive teacher practices, demotivators, and academic strength of students. Three questions related to students' natural interest in the content were grouped together to represent intrinsic motivation and then averaged to provide one

score. Four questions about teacher practices including time to complete tasks, choice, feedback and good treatment from the teacher were grouped together to represent autonomy supportive practices and then averaged. Three questions were asked about students working to avoid trouble, being irritated by how their teacher pushes them, and doing work only because they teacher tells them to. These questions were grouped as demotivators, and then averaged. Lastly, two questions were asked about the student's perception of their academic performance in the course, as well as their comprehension of the material. These two questions were grouped and averaged and given the label strong student. There was a question asked about whether the student "worked hard for good grades." This question was eliminated from the analysis because it could potentially confuse the analysis of students' commitment to working hard in class with their determination to earn good grades, which could de-track from the focus of the research questions on motivation.

Descriptive Statistics. The four averages described above (intrinsic motivation, teacher autonomy supportive practices, demotivators, and strong student) were run through descriptive statistics. The tables below provide the descriptive statistics on each item, as well as the averages.

Table 3

Survey Math Items

Item Name	Mean	Std. Deviation	N	Skewness
Time to Complete	4	0.885	24	0
Choice	3.46	1.25	24	-0.12
Feedback	4.33	0.87	24	-1.61
Good treatment	4.08	1.06	24	-0.90
Interesting	3.58	1.18	24	-.030
Fun in Learning	3.42	1.18	24	-0.22
Learn Independently	2.92	1.28	24	0.033
Teacher Tells	2.67	1.24	24	0.26
Teacher Push	2.46	1.29	24	0.50
Avoid Trouble	3.38	1.44	24	-0.25
Comprehension	3.92	0.72	24	0.13
Good Performance	4.00	0.93	24	-0.70
Strong Student	3.96	0.67	24	-0.18

Table 4

Survey English Items

Item Name	Mean	Std. Deviation	N	Skewness
Time to Complete	4.04	0.93	23	-0.47
Choice	3.91	1.04	23	-0.61
Feedback	4.22	0.95	23	-1.17
Good treatment	4.09	0.90	24	-0.59
Interesting	3.70	1.26	24	-0.56
Fun Learning	3.48	1.04	24	-0.70
Learn Independently	3.09	1.13	24	-0.19
Teacher Tells	2.87	1.25	24	0.27
Teacher Push	2.30	1.06	24	0.57
Avoid Trouble	3.48	1.28	24	-0.16
Comprehension	4.13	0.87	24	-0.73
Good Performance	4.09	1.00	24	-0.79
Strong Student	4.15	.878	24	-.750

Table 5

Grouped Items in Math and Language Arts (Intrinsic Motivation, Teacher Autonomy, Demotivation)

Item Name	Mean	Std. Deviation	N	Skewness
Math-Teacher autonomy	3.97	0.74	24	-0.42
Math-Intrin. Motivation	3.31	1.02	24	0.12
Math-Demotivation	2.83	1.00	24	0.19
Eng.-Teacher Autonomy	4.10	0.83	24	-0.59
English-Intrin. Motivation	3.46	0.98	24	-0.25
English-Demotivation	2.92	0.94	24	0.19

The survey items were run through descriptive statistics using an online quantitative data analysis system, SPSS. Table 3 and Table 4 describe each of the survey items and the mean, standard deviation, n size and skewness of each. Table 5 also provides the mean, standard deviation, n size and skewness of the average of items that were grouped together, as described above. Generally speaking, the scores associated with teacher practices in both subjects associated with intrinsic motivation were relatively high. Here are the student survey questions associated with teacher practices and how they affect students:

In my English/Language Arts class, I often have choices on how I complete assignments.

1 2 3 4 5

Not really true

Mostly true

There was 1 outlier who answered a “2” in response to the following question:

In my English/Language Arts class, I usually understand what I’m learning and feel like I know what I’m doing.

1 2 3 4 5

Not really true

Mostly true

In the averaged scores, 2 more outliers were discovered; 1 in the demotivators grouped item in English and 1 in the demotivators grouped item in Math. Outliers were kept in the analysis due to the small sample size.

Correlations. Correlation analysis was conducted using the mean-score variables: teacher autonomy, intrinsic motivation, demotivation, and strong student. The significance level was set at 0.05. T-tests were also performed. The t-test revealed that there is a statistically significant relationship that exists between the factors.

Correlation of Math items. A moderately positive correlation was found between teacher autonomy supportive practices in Math class and intrinsic motivation in Math class, $r(23) = 0.48, p = 0.02$. A moderately positive correlation was found between teacher autonomy supportive practices in Math and the perception students had of being a strong student, $r(23) = 0.69, p = 0.00$. A moderately positive correlation was found between intrinsic motivation in Math class and students’ perception that they were strong students in Math class, $r(23) = 0.67, p = 0.00$. All other correlation pairs were not significant at the 95% confidence level.

Correlation of English items. A moderately positive correlation was found between teacher autonomy supportive practices in English class and intrinsic motivation in English class, $r(23) = 0.60, p = 0.00$. A moderately positive correlation was found between teacher autonomy supportive practices in English and the perception students had of them being a strong student $r(23) = 0.63, p = .00$. A moderately positive correlation was found between intrinsic motivation in Math class and students perception that they were strong students in English class $r(23) = 0.59, p = .00$. All other correlation pairs were not significant at the 95% confidence level.

Correlations of Math and English and t-tests. There were correlations found across content areas in Math and English. For example, if a student identified that he was a strong student in Math, it was predictive that he considered himself strong in English as well, based on this data set. Teacher autonomy supportive practices in English had a strong positive correlation with teacher autonomy supportive practices in Math, $r(23) = 0.76, p = 0.00$. A moderate positive correlation was found between intrinsic motivation in Math and intrinsic motivation in English, $r(23) = 0.50, p = 0.01$. A moderate positive correlation was found between students' perception that they were a strong student in Math and a strong student in English, $r(23) = 0.45, p = 0.03$. All other correlations were not found to be significant at the 95% confidence level.

To explore the statistical significance further, t-tests were conducted to examine if differences between Math and English scores were apparent. No pairs showed a significant difference, which supports the conclusion that the variables studied (teacher autonomy supportive practices, intrinsic motivation, and perceptions of being a strong student) were not subject specific for this sample of adolescent males.

Quantitative Summary

There were important findings discovered through the quantitative analysis in this study. A major correlation was found between teacher autonomy supportive practices and intrinsic motivation, as supported in the literature (Deci, Nezlek, & Sheinman, 1981; Deci, Vallerand, Grolnick & Ryan, 1987; Pelletier & Ryan, 1991). No significant differences were found between Math and Language Arts, in terms of students' intrinsic motivation, their perceptions of themselves as strong students, or their view of teachers' autonomy supportive practices. This conclusion is not consistent with some studies, which found motivation to be more domain-specific (Eccles, et. al, 1993; Meece, Glienke and Burg, 2006; Steinmayr & Spinath, 2009; Spinath, Eckert and Steinmayr, 2014.) As the researcher, given the lower grades found in Math in District B, I expected Math class to have indications of lower motivation. However, those in this sample did not support that notion.

CHAPTER IV

DISCUSSION AND RECOMMENDATIONS

This chapter will begin with a review of the research questions and a list of the data sources used to answer each research question. The remainder of the chapter will be divided into three sections based on the three research questions posed. Each section will examine whether the data collected in the study supported the research question. Each research question discussion will be followed by suggestions for how the findings of the study can be applied to classroom practice.

Research Question 1

What kind of motivation is evident among boys in grades 7-10 in Math and Language Arts classes (intrinsic, extrinsic, amotivation)? To answer this question, the following data sets were used: survey questions 6,7,8, short answer survey questions 16 and 30, and student focus group questions 2, 5, and 8. What was discovered is that there was slightly more intrinsic motivation in Language Arts compared to math (3.46 compared to 3.31). However, the short answer survey questions about learning indicated that some students had more hands-on fun in math, which they found motivating. Furthermore, regardless of the subject, getting good grades and graduating from high school were motivating factors that seemed to persist regardless of the subject. In the high school focus group, graduation was mentioned a great deal, and this trend was also reflected in the surveys. Though none of the students mentioned credits as a motivator explicitly, their participation in a credit accumulation system might still have an affect, though this cannot be established from the evidence in this study.

Motivation outside of the classroom. When asked about activities they found interesting that they continued for the fun of it, most boys described activities that were outside of the classroom, i.e., sports, music, spending time with family, art, working a job. When asked about low academic performance, and what they felt contributed to it for other students, students pointed to factors that were external, like peers who were distracting, or family problems. They also spoke about students themselves being unmotivated, though they were not specific about what contributed to this amotivation.

In response to the research question, student motivation as it relates to academic content (particularly English and Math) appears extrinsic. Students seemed to be most motivated by grades and graduation and future goals. A catalyst for their intrinsic motivation seemed to be activities that occurred outside of the classroom and mostly in their leisure time. One high school student during a focus group voiced it this way, “I think a lot of times if we didn’t have those things we did for ourselves it would make it a lot harder to focus on the things we did for just grades and to make other people happy.” Though most students were able to describe what motivated them in school (very few students said nothing motivated them) it typically was not the content itself or the classroom learning experience. This is supported by the question about continuing to learn about the subject independently outside of the classroom. Of the questions asked associated with intrinsic motivation, this was the lowest score found (Math 2.92/English 3.09).

Implications for Classroom Practice

Bringing the outside inside. If the data around motivation for boys suggest that they are more intrinsically motivated by activities *outside* of the classroom, it provides

teachers an opportunity to bring the outside learning activities *inside* the classroom. This section of the study reveals the importance of real-world relevance for boys, and the importance of making the learning experience feel more like activities they enjoy outside of the classroom. Given the prevalence of sports and physical work in their responses, it is crucial that learning experiences include a great deal of movement. More than brain breaks and movement that is a departure from the learning experience, movement has to be an integral *part* of the learning experience. This is not limited to athletic activity, but would include other activities like skits, labs, outdoor experiences, or virtually any activity that would allow boys to be out of their seats to learn.

I also think that the activities they identified as intrinsically motivating include an element of creative freedom that should not be ignored. As discussed in the literature review, boys tend to be less compliant, which means they are less likely to be successful at meeting prescribed deadlines. However, the positive side of that is that boys may be more creative, and more likely to think outside the box without needing permission or a prescription to “get it right.” Rather than provide boys a formulaic expectation to follow in teaching and learning, teachers are encouraged to provide them opportunities to explore and create; design answers to questions and think through solutions to solve problems.

Research Question 2

How do boys’ perceptions of their teachers’ autonomy supportive practices affect their intrinsic motivation? To answer this question, the following data sets were used: survey questions 3, 4, 5, 14, 17, 18, 19, and 28, student focus group questions 3, 4 and 5, and teacher focus group questions 3, 4, and 5. Teachers did identify a relationship

between their practices and motivation in their students, though it was not necessarily focused on intrinsic motivation. They mentioned strategies they noticed produced more enthusiasm in their students, and seemed to increase engagement. These strategies that teachers believed enhanced engagement were not necessarily tied to motivation.

Nonetheless, it appeared that teacher practices that were autonomy supportive were indeed correlated with intrinsic motivation according to the statistical correlations found. In terms of demotivating behaviors, these scores from the student survey were much lower, indicating that students did not assert that their teachers engaged in demotivating behaviors to a great extent.

Implications for Classroom Practice

The difference between engagement and intrinsic motivation. It is worth investigating the distinction between student engagement and intrinsic motivation. While engagement seems to be more associated with a teacher's ability to keep students interested, intrinsic motivation is more closely associated with the teacher's ability to create conditions of learning for students who then sustain their own level of interest through their curiosity. Though engagement is important in order to support positive behavior and exposure to academic content, intrinsic motivation's importance is found in that it supports a learner disposition that goes beyond achievement. Students who are intrinsically motivated expand on their learning and go on to discover new ideas rather than just consume old ones. Though intrinsic motivation may be difficult to achieve with consistency across content areas, it is more valuable. It goes beyond the classroom and helps students discover a more holistic approach to learning that puts each learning task within a larger context.

Research Question 3

What is the perceived difference between male and female achievement and attitudes toward school among boys and teachers? The following data sets were used to answer this question: student focus group questions 6 and 7, and teacher focus group questions 1 and 2. The high school focus group was the most vocal, where most of the students who responded did not think that gender mattered. In one middle school focus group, boys talked about gender differences in terms of behaviors, but not academic performance. Though most teachers talked about differences they observed with boys underachieving compared to girls, one high school teacher did not see much of a difference by gender, and thought that the fact that his students were academically advanced might account for the gender balance. While the research on boys' underachievement is extensive, most of the perceptions and attitudes revealed among boys in the study as well as some teachers, indicated that they are not aware of significant academic gender gaps in their classrooms.

Implications for Classroom Practice

Academic data by gender. Given that many teachers are unaware of gender achievement gaps, it is important that they consider collecting data in their own classrooms to confirm that there is no gender gap present. Some teachers in the study mentioned boys they had that were very good students. Though there are many boys who are performing in our current educational system, it is important that these boys are not used as a justification to ignore gender achievement gaps. Even boys in this study, many of whom are probably strong academic performers, seem to more motivated by extrinsic factors than the joy of learning itself. This may be because they view school as a means

to an end, rather than a place of learning and growth. Those of us who love teaching and learning owe it to our boys to create academic spaces that are engaging and motivating for them. Our focus needs to be on boys who achieve within our current system as well as those who struggle within the current system and could benefit from a more flexible and adaptable approach to teaching and learning.

Future Research Recommendations

There were several potential research questions that came out of this study. One recommendation for future research is to expand this study to include a larger sample, perhaps within the same school district, to see if the results hold. A future study could add to this examination by securing student data within the classrooms identified to see if there is indeed a gender gap. Furthermore, aligning the grades and test scores of the students in the study could have allowed for more triangulation. Secondly, it would be worth continuing to study teacher autonomy supportive practices and add teacher gender as a variable to see if the combination of gender and autonomy supportive practices has a greater impact on intrinsic motivation in boys. Future orientation emerged powerfully in this study. An investigation of extrinsic motivation, comparing motivation for grades with a motivation concerning the future (graduation, college, career) would be worth exploring.

Conclusion

The mixed method study described above investigated the connection between teacher autonomy supportive practices and boys' motivation. A moderate positive correlation was discovered between those two factors. Furthermore, the study revealed boys' motivation in school as well as the perceptions teachers have concerning the gender

achievement gap and their role in supporting boys' achievement. Given the sample size (n=24), it is important to note that this research study would need to be replicated with a larger sample size to confirm its findings. Nonetheless, this case study can add to the literature around boys' achievement, teacher practices and intrinsic motivation

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APPENDIX A

STUDENT SURVEY: MOTIVATION AND AUTONOMY SUPPORTIVE
PRACTICES

Please answer the following questions by circling your response to each statement.

1. I am in this grade level:

- 7
- 8
- 9
- 10
- Other

2. Right now in school, I am taking both English/Language Arts and Math classes.

- True
- False

3. In my Math class, my teacher allows me enough time to finish my work.

1 2 3 4 5

Not really true

Mostly true

4. In my Math class, I often have choices on how I complete assignments.

1 2 3 4 5

Not really true

Mostly true

5. In my Math class, my teacher often tells me things that help me do better the next time.

1 2 3 4 5

Not really true

Mostly true

6. In my Math class, I usually enjoy class because it is interesting.

1 2 3 4 5

Not really true

Mostly true

7. In my Math class, I usually have fun learning the different topics.

1 2 3 4 5

Not really true

Mostly true

8. In my Math class, I want to learn more about the subject, and often learn things on my own outside of class.

1 2 3 4 5

Not really true

Mostly true

9. In my Math class, I only do the work in this class because the teacher tells me to.

1 2 3 4 5

Not really true

Mostly true

10. In my Math class, the teacher often pushes me to do work in a way that makes me feel annoyed or frustrated.

1 2 3 4 5

Not really true

Mostly true

11. In my Math class, I do my work mostly to avoid getting in trouble.

1 2 3 4 5

Not really true

Mostly true

12. In my Math class, I do my work because I want to keep good grades.

1 2 3 4 5

Not really true

Mostly true

13. In my Math class, I usually understand what I'm learning and feel like I know what I'm doing.

1 2 3 4 5

Not really true

Mostly true

14. In my Math class, the way the teacher treats me helps me do well in this class.

1 2 3 4 5

Not really true

Mostly true

15. In my Math class, I get pretty good grades.

1 2 3 4 5

Not really true

Mostly true

16. In your Math class, what are the things that motivate or make you excited about learning? (Please answer in your own words)

17. In my English/Language Arts class, my teacher allows me enough time to finish my work.

1 2 3 4 5

Not really true

Mostly true

18. In my English/Language Arts class, I often have choices on how I complete assignments.

1 2 3 4 5

Not really true

Mostly true

19. In my English/Language Arts class, my teacher often tells me things that help me do better the next time.

1 2 3 4 5

Not really true

Mostly true

20. In my English/Language Arts class, I usually enjoy class because it is interesting.

1 2 3 4 5

Not really true

Mostly true

21. In my English/Language Arts class, I usually have fun learning the different topics.

1 2 3 4 5

Not really true

Mostly true

22. In my English/Language Arts class, I want to learn more about the subject, and often learn things on my own outside of class.

1 2 3 4 5

Not really true

Mostly true

23. In my English/Language Arts class, I only do the work in this class because the teacher tells me to.

1 2 3 4 5

Not really true

Mostly true

24. In my English/Language Arts class, the teacher often pushes me to do work in a way that makes me feel annoyed or frustrated.

1 2 3 4 5

Not really true

Mostly true

25. In my English/Language Arts class, I do my work mostly to avoid getting in trouble.

1 2 3 4 5

Not really true

Mostly true

26. In my English/Language Arts class, I do my work because I want to keep good grades.

1 2 3 4 5

Not really true

Mostly true

27. In my English/Language Arts class, I usually understand what I'm learning and feel like I know what I'm doing.

1 2 3 4 5

Not really true

Mostly true

28. In my English/Language Arts class, the way the teacher treats me helps me do well in this class.

1 2 3 4 5

Not really true

Mostly true

29. In my English/Language Arts class, I get pretty good grades.

1 2 3 4 5

Not really true

Mostly true

30. In your English/Language Arts class, what are the things that motivate or make you excited about learning? (Please answer in your own words)

APPENDIX B
FOCUS GROUP QUESTIONS

(Student Participants)

1. How do you know when you are doing well in school?
2. For what reasons do you perform well in school?
3. When you are doing well in a class, what or who do you think is helping you? What is contributing to your success?
4. What specifically does your teacher do to help you learn?
5. Think about other kids you know who are not doing well in class. Why do you think they are not doing well?
6. Talk to me about boys and girls in your class. Is there any difference in academic performance? Describe the difference.
7. Do you believe boys and girls learn differently? If so, how?
8. Think of the last time you were working hard because you were interested in something. What was the situation?
9. What other things do you want to share about student performance in class?

(Teacher Participants)

1. What do you know (or what have you heard) about achievement between boys and girls?
2. Is there a gender gap in academic performance in your classroom between boys and girls? If so, please describe it in your own words.

3. What practices/approaches do you think support good academic performance for students?
4. What practices/approaches do you think support good academic performance for your male students specifically?
5. Are there any teacher practices that you believe enhance intrinsic motivation in your boys? If so, please describe them.

APPENDIX C

RECRUITMENT EMAIL TO TEACHERS

If you are a teacher or paraprofessional that works with students in grades 7,8,9 or 10, please read on!

I hope this email finds you well. I am conducting an **optional, voluntary focus group for those who teach or support students in grades 7,8,9,10**. As part of a research study, I am interested in your opinions about motivation and academic achievement, particularly for your male students. I am investigating ways in which educators encourage intrinsic motivation in their male students.

I would love to hear your perspective. If you are interested in sharing, please meet me and other teachers for an informal conversation over lunch in Room____. Lunch will be provided. Your participation in the focus group will be kept confidential and private.

Please note that this is an optional opportunity, and there is no expectation that you attend. I understand that everyone is busy and many have prior commitments that will not allow them to participate. If you are interested, feel free to join us. If you are not able, I completely understand.

If you have any questions about the focus group, please contact me by email, or call me at 720-280-6080.

Thank you for your time,

Sue-Lin Toussaint

APPENDIX D

ASSENT FORM FOR STUDENTS

Intrinsic Motivation in Adolescent Boys Student Consent Form

I am asking if you would be willing to participate in a study about middle school and high school boys, and what motivates them to do well in school. The goal of this study is to better understand what teachers do in the classroom that helps boys to learn.

I am asking for your to participate in this study because you are a boy who is in grades 7,8,9, or 10.

If you agree to participate in this study, you will be asked to do the following:

- Complete a 10-15 minute survey about your experience in school.
- Participate in a focus group, which is a small group of boys talking about their school experiences. This focus group will be audio-recorded, meaning your voice will be recorded. Your responses will be transcribed, or typed into a script. Lunch will be provided during the focus group.
- You may be asked to be participate in a one-on-one interview with the researcher that will take about 15 minutes. .

You will not be asked any personal questions, and if you are asked any question you do not want to answer, you do not have to answer it. Your name will be kept confidential.

If you have any questions about the study, you can ask the researcher any questions. You can call or text the researcher at 720-280-6080 if you have any questions later.

You do not have to do this study. You are volunteering to participate. There is no compensation for participation.

I want to be in the study at this time. Yes___ No___

I am willing to participate in the following parts of the study:

Survey_____ Focus Group_____ Interview_____

I will get a copy of this form to keep.

Student Printed Name _____

Student Signature: _____ *Date:* _____

I have explained the research at a level that is understandable by the child and believe that the child understands what is expected during this study.

Signature of Person Obtaining Assent: _____ Date: _____

APPENDIX E

ASSENT FORM FOR TEACHERS

Intrinsic Motivation in Adolescent Boys
Teacher Consent Form

I am asking if you would be willing to participate in a study about middle school and high school boys, and what motivates them to do well in school. The goal of this study is to better understand what teachers do in the classroom that helps boys to learn.

I am asking for your to participate in this study because you are a teacher or paraprofessional for students in grades 7,8,9, or 10.

If you agree to participate in this study, you will be asked to do the following:

- Participate in a focus group, which is a small group of teachers and paras. This focus group will be audio-recorded, meaning your voice will be recorded. Your responses will be transcribed, or typed into a script.
- You will not be asked any personal questions, and if you are asked any question you do not want to answer, you do not have to answer it. Your name will be kept confidential.

If you have any questions about the study, you can ask the researcher any questions. You can call or text the researcher at 720-280-6080 if you have any questions later.

You do not have to do this study. You are volunteering to participate. There is no compensation for participation.

I will get a copy of this form to keep.

Teacher/Paraprofessional Printed Name _____

Signature: _____ *Date:* _____

APPENDIX F

CONSENT FORM FOR STUDENTS

Principal Investigator: Sue-Lin Toussaint

COMIRB No: 16-1751

Version Date: 10/4/16

Study Title: Improving Boys Achievement through
Autonomy Supportive Practices that Increase Intrinsic Motivation

I would like to know if you will allow your student to be in a research study. This form provides you with information about the study. As the researcher, I will describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part.

This study was designed to learn more about middle school and high school boys and what motivates them to learn and achieve in school.

About the Study

Your student is being asked to be in this research study because he is a male student in grades 7,8,9, or 10. Up to 400 students will be involved in this study.

If you allow your student to join the study, he will be asked to complete a **survey** that should take about ten minutes to complete. This survey will be completed at school. He may also be asked to participate in a focus group; a discussion group with other boys his age to talk about their learning in school. A few boys will be asked to have a one-on-one interview with the researcher to discuss their experience in school.

This study will be conducted from October 2016 to February 2017.

Your student will not be asked any personal questions, but only questions about how they learn, what they think about their classes, and what their teachers do that helps them learn.

The study may include risks that are unknown at this time.

This study is designed for the researcher to learn more about boys and motivation so that we can continue to learn about what helps boys learn better in school.

There is no pay associated with the study, but boys who are included in the focus group will be provided lunch, since it will happen during lunch time. It will not cost you anything to be in the study.

Participating in the Study

Taking part in this study is voluntary. Your student has the right to choose not to take part in this study. If you choose to have him participate, you have the right to stop at any time. If you refuse or decide to withdraw later, you will not lose any benefits or rights to which you are entitled.

The researcher carrying out this study is Sue-Lin Toussaint. You may ask any questions you have now. If you have questions later, you may call Sue-Lin Toussaint at 720-280-6080.

You may have questions about your rights as someone in this study. You can call Sue-Lin Toussaint with questions. You can also call the Colorado Multiple Institutional Review Board (IRB). You can call them at 303-724-1055.

Confidentiality

We will do everything we can to keep your records a secret. It cannot be guaranteed.

Both the records that identify your student and the consent form signed by you may be looked at by others, including: Federal agencies that monitor human subject research, People at the Colorado Multiple Institutional Review Board (COMIRB), the group doing the study and Regulatory officials from the institution where the research is being conducted who want to make sure the research is safe.

The results from the research may be shared at a meeting. The results from the research may be in published articles. **Your student's name will be kept private** when information is presented.

Some things we cannot keep private. If your student gives us any information about child abuse or neglect we have to report that to Social Services or other agency, just like in school. Also, if we get a court order to turn over your study records, we will have to do that. Another thing we can't keep private is if you or your student tells us you are going to physically hurt yourself or someone else, we have to report that to the proper authorities.

***Consent to Audio Recording and Transcription**

This study involves the audio recording of focus groups and/or interviews with the researcher. Neither your student's name nor any other identifying information will be associated with the audio or audio recording or the transcript. Only the research team will be able to listen to the recordings.

The audio recording will be transcribed by the researcher and erased once the transcriptions are checked for accuracy. Transcripts of the focus group and interview may be reproduced in whole or in part for use in presentations or written products that result from this study. Neither your student's name nor any other identifying information will be used in presentations or in written products resulting from the study.

Agreement to be in this study and use my student’s information

I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I understand and authorize the access, use and disclosure of my student’s information as stated in this form. I know that being in this study is voluntary. I choose to allow my student to be in this study: I will get a signed and dated copy of this consent form.

Parts of the Study

This study has three parts that include student participation: survey, focus group, and interviews. Please place an “x” by all of the parts of the study you are willing to have your student participate in.

Survey_____ Focus Group_____ Interview_____

Name of Student_____

Signature of Parent/Guardian:_____ Date:_____

Printed Name of Parent/Guardian:_____

Consent form explained by:_____ Date:_____

*This section was adapted from
http://www.massbay.edu/uploadedFiles/Second_Level_Pages/Directory/SAMPLE_AUDIO_RECORDING_CONSENT_FORM.pdf

Investigador Principal: Sue-Lin Toussaint

N° COMIRB: 16-1751

Fecha de la Versión: 10/4/16

Título del Estudio: Mejorando el Logro de Niños a través de
Prácticas de Autonomía de Apoyo que Aumentan la Motivación Intrínseca

Me gustaría saber si permite que su estudiante esté en un estudio de investigación. Este formulario le proporciona información sobre el estudio. Como la investigadora, describiré este estudio y responderé a todas sus preguntas. Por favor lea la siguiente información y haga preguntas sobre cualquier cosa que no entienda antes de decidir si debe o no participar.

Este estudio fue diseñado para aprender más acerca de los niños de la escuela secundaria y preparatoria y qué los motiva a aprender y lograr en la escuela.

Acerca del Estudio

Se le pide a su hijo a participar en este estudio de investigación porque él es un estudiante varón en los grados 7,8,9 o 10. Hasta 400 estudiantes estarán involucrados en este estudio.

Si usted permite que su estudiante se una al estudio, se le pedirá a él que complete una **encuesta** que debe de tomar unos diez minutos en completarse. Esta encuesta se completará en la escuela. También se le puede pedir a participar en un grupo de enfoque; un grupo de discusión con otros chicos de su edad para hablar de su aprendizaje en la escuela. Se les pedirá a algunos chicos a tener una entrevista de uno-a-uno con la investigadora para hablar de su experiencia en la escuela.

Este estudio se llevará a cabo a partir de octubre de 2016 a febrero de 2017.

A su estudiante no se le harán preguntas personales, pero sólo preguntas acerca de cómo aprenden, lo que piensan acerca de sus clases, y lo que sus maestros les ayudan a aprender.

Este estudio puede incluir riesgos que son desconocidas en este momento.

Este estudio está diseñado para que la investigadora obtenga más información sobre los chicos y la motivación para que podamos seguir aprendiendo acerca de lo que ayuda a los chicos a aprender mejor en la escuela.

No hay ningún pago asociado con el estudio, pero los chicos que estén incluidos en el grupo de enfoque se les proporcionará el almuerzo, ya que va a suceder durante la hora del almuerzo. No le costará nada participar en el estudio.

Participando en el Estudio

La participación en este estudio es voluntaria. Su estudiante tiene el derecho a elegir no participar en este estudio. Si usted decide hacerlo participar, usted tiene el derecho de parar

en cualquier momento. Si usted se niega o decide retirarse más tarde, no perderá ningún beneficio o derechos a los que tiene derecho.

La investigadora de la realización de este estudio es Sue-Lin Toussaint. Usted puede hacer cualquier pregunta que tenga ahora. Si tiene alguna pregunta más adelante, puede llamar a Sue-Lin Toussaint al 720-280-6080.

Es posible que tenga preguntas sobre sus derechos como alguien en este estudio. Puede llamar a Sue-Lin Toussaint con preguntas. También puede llamar al Consejo de Revisión Institucional de Colorado Múltiple (COMIRB). Usted puede comunicarse con ellos a través del 303-724-1055.

Confidencialidad

Haremos todo lo posible para mantener sus registros un secreto. No se puede garantizar.

Tanto los registros que identifican a su estudiante y el formulario de consentimiento firmado por usted pueden ser vistos por los demás, incluyendo: Las agencias federales que supervisan la investigación con seres humanos, las personas en el Consejo de Revisión Institucional de Colorado Múltiple (COMIRB), el grupo que realizan el estudio y Funcionarios Reguladores de la institución donde se realiza la investigación que quieren asegurarse de que la investigación es segura.

Los resultados de la investigación pueden ser compartidos en una reunión. Los resultados de la investigación pueden estar en artículos publicados. **El nombre de su estudiante se mantendrá en privado**, cuando se presenta la información. Algunas cosas no podemos mantener en privado. Si su hijo nos da alguna información sobre abuso o negligencia tenemos que informar a los Servicios Sociales o a otra agencia, al igual que en la escuela. Además, si recibimos una orden judicial para entregar sus registros del estudio, vamos a tener que hacer eso. Otra cosa que no podemos mantener en privado es si usted o su hijo nos dice que se va a lastimar físicamente a sí mismo o a otra persona, tenemos que informar que a las autoridades correspondientes.

*** Consentimiento para la grabación y transcripción de audio**

Este estudio involucra la grabación de grupos de enfoque y/o entrevistas con el investigador. Ni el nombre de su estudiante ni ninguna otra información de identificación estará asociada con el audio o grabación de audio o la transcripción. Sólo el equipo de investigación podrá escuchar las grabaciones.

La grabación de audio será transcrita por el investigador y borrada una vez que las transcripciones se verifiquen para precisión. Las transcripciones del grupo de enfoque y la entrevista pueden ser reproducidas completas o parcialmente para uso en presentaciones o productos escritos que resulten de este estudio. Ni el nombre de su estudiante ni ninguna otra información de identificación se usará en presentaciones o en productos escritos resultantes del estudio.

Acuerdo para estar en este estudio y el uso de la información de mi estudiante

He leído este documento sobre el estudio o fue leído a mí. Yo entiendo los posibles riesgos y beneficios de este estudio. Entiendo y autorizo el acceso, uso y divulgación de la información de mi estudiante como se indica en este formulario. Sé que el participar en este estudio es voluntario. Elijo permitir que mi estudiante participe en este estudio: Voy a obtener una copia firmada y fechada de este formulario de consentimiento.

Partes del estudio

Este estudio tiene tres partes que incluyen la participación de los estudiantes: encuesta, grupo de enfoque y entrevistas. Por favor marque con una "x" en todas las partes del estudio que está dispuesto a que su estudiante participe en.

Encuesta_____ **Grupo de Enfoque**_____ **Entrevista**_____

Firma del Padre/Tutor: _____ Fecha: _____

Nombre Impreso del Padre/Tutor: _____

Formulario de consentimiento explicado por: _____ Fecha: _____

* Esta sección fue adaptada de
http://www.massbay.edu/uploadedFiles/Second_Level_Pages/Directory/SAMPLE_AUDIO_RECORDING_CONSENT_FORM.pdf)

APPENDIX G

CODES PRESENCE AMONG DATA SETS

	No motivation	Having Fun	Food as motivator	Boys performing academically
Focus group Teachers HS site 1			1	1
Focus group Students MS site 1			1	1
Focus group Teachers HS site 3			1	
Focus group Students HS site 3				1
Focus group Teachers MS site 2				1
Focus group Students MS site 2			1	1
Survey Short Answer (Math)	1	1		1
Survey Short Answer (English)	1	1		1
	Graduation	Importance of pleasing family	Family members, own children	Future Orientation-Career
Focus group Teachers HS site 1		1		1
Focus group Students MS site 1			1	1
Focus group Teachers HS site 3				
Focus group Students HS site 3	1	1	1	1
Focus group Teachers MS site 2				1
Focus group Students MS site 2		1		1
Survey Short Answer (Math)	1	1		1
Survey Short Answer (English)	1	1		1
	Boys-more ADHD	Boys-less concerned with grades	Girls' more motivated in academics	Boys less organized
Focus group Teachers HS site 1	1		1	1
Focus group Students MS site 1	1		1	1
Focus group Teachers HS site 3		1	1	
Focus group Students HS site 3			1	
Focus group Teachers MS site 2		1	1	
Focus group Students MS site 2				1
Survey Short Answer (Math)				
Survey Short Answer (English)				
	Learning differences based on gender	No gender difference in academic achievement	Other Concepts	Other peer influence
Focus group Teachers HS site 1	1		1	1
Focus group Students MS site 1	1		1	
Focus group Teachers HS site 3			1	
Focus group Students HS site 3			1	1
Focus group Teachers MS site 2			1	
Focus group Students MS site 2	1	1	1	1
Survey Short Answer (Math)				1
Survey Short Answer (English)				

	Boys' personal interests (connecting to)	Choice for students	Chunking information	Clear Purpose
Focus group Teachers HS site 1	1			1
Focus group Students MS site 1				
Focus group Teachers HS site 3	1	1	1	1
Focus group Students HS site 3				
Focus group Teachers MS site 2		1		1
Focus group Students MS site 2			1	1
Survey Short Answer (Math)				
Survey Short Answer (English)				

	Lack of motivation (amotivation)	Learning styles	Relationship Building with Student	Other Effective Strategies
Focus group Teachers HS site 1		1		1
Focus group Students MS site 1		1		
Focus group Teachers HS site 3	1		1	1
Focus group Students HS site 3				1
Focus group Teachers MS site 2			1	1
Focus group Students MS site 2	1	1		1
Survey Short Answer (Math)				
Survey Short Answer (English)				

	Domain-specific interests based on gender	Activities that are intrinsically motivating	Sports, PE, Physical Activity (enjoyed by boys)	Grades that are good
Focus group Teachers HS site 1			1	
Focus group Students MS site 1	1	1	1	
Focus group Teachers HS site 3	1	1		
Focus group Students HS site 3		1		1
Focus group Teachers MS site 2	1	1	1	
Focus group Students MS site 2		1		
Survey Short Answer (Math)		1	1	1
Survey Short Answer (English)		1	1	1

	Motivation based on subject	Motivation--strong performing students	Motivation--strong performing students	Reasons for low acad. performance
Focus group Teachers HS site 1		1	1	
Focus group Students MS site 1				1
Focus group Teachers HS site 3	1	1	1	
Focus group Students HS site 3	1			1
Focus group Teachers MS site 2	1			
Focus group Students MS site 2		1	1	1
Survey Short Answer (Math)	1			
Survey Short Answer (English)	1	1	1	

	Boys-more IEPs/learning plans	Boys-more behavior (or girls)	Developmental differences	Identity
Focus group Teachers HS site 1		1	1	1
Focus group Students MS site 1		1		
Focus group Teachers HS site 3	1	1	1	1
Focus group Students HS site 3				
Focus group Teachers MS site 2	1	1	1	1
Focus group Students MS site 2				
Survey Short Answer (Math)				
Survey Short Answer (English)				

	Peers as academic encouragement	Importance of role models for boys	Competition in academic work	Active Learning
Focus group Teachers HS site 1		1	1	1
Focus group Students MS site 1				
Focus group Teachers HS site 3			1	1
Focus group Students HS site 3	1			
Focus group Teachers MS site 2		1	1	1
Focus group Students MS site 2	1			1
Survey Short Answer (Math)	1			1
Survey Short Answer (English)	1			

	Collaborative Work	Academic Feedback	Encouragement from teacher	Explaining concepts in multiple ways
Focus group Teachers HS site 1				1
Focus group Students MS site 1				
Focus group Teachers HS site 3	1	1	1	
Focus group Students HS site 3		1	1	1
Focus group Teachers MS site 2			1	
Focus group Students MS site 2	1		1	
Survey Short Answer (Math)	1		1	
Survey Short Answer (English)			1	

APPENDIX H

FIRST ITERATION CODES

Teacher Strategies and Approaches

- Humor
- Collaborative Learning
- Social-emotional Learning
- Short-term goals
- Chunking Information