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Ting-Ling Sha

May, 2010

MOTIVATIONAL BELIEFS, ETHNIC IDENTITY, AND SENSE OF BELONGING: RELATIONS TO SCHOOL ENGAGEMENT AND ACADEMIC ACHIEVEMENT

A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
Of the Requirements for the Degree

Doctor of Philosophy

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Abstract

Students' motivational beliefs, sense of belonging, and ethnic identity were examined in relation to effort, persistence, procrastination, school attendance, and academic achievement. A total of 589 seventh and eighth graders completed a self-report survey assessing motivational belief variables (academic self-efficacy; Midgley et al., 2000; value of academic success; Fuligni, Witkow, & Garcia, 2005; mastery-approach goal orientation; Midgley et al., 2000, mastery-avoidance goal orientation; Elliot & McGregor, 2001; performance-approach goal orientation and performance-avoidance goal orientation; Midgley et al., 2000), sense of belonging variables (acceptance, belonging, rejection; Hagborg, 1994; perception of teachers' opinions), ethnic identity variables (affirmation, belonging, and commitment and exploration and behaviors; Roberts et al., 1999), and school engagement variables (effort, persistence, procrastination; Wolters, 2004; attendance). Results from the hierarchical multiple linear regressions indicated that feelings of rejection, the adoption of mastery-avoidance goal orientation, and the adoption of performance-avoidance goal orientation were negative predictors of effort and persistence. Perceptions of teachers' opinions, academic self-efficacy, value of academic success, mastery-approach goal orientation, and performance-approach goal orientation were positive predictors of effort. Academic self-efficacy, value of academic success, and mastery-approach goal orientation were positive predictors of persistence. Rejection, mastery-avoidance goal orientation, performance-

approach goal orientation, and performance-avoidance goal orientation were positive predictors of procrastination, while value of academic success and mastery-approach goal orientation were both negative predictors of procrastination. Belonging and value of academic success were positive predictors of attendance, while mastery-avoidance was a negative predictor. Academic self-efficacy and attendance were positive predictors of overall language arts averages, overall academic averages, and reading achievement scores. Value of academic success was a positive predictor of student overall academic averages and reading achievement scores. However, mastery-approach goal orientation was a negative predictor of each of the academic outcome variables. Persistence (positively) and procrastination (negatively) were also predictive of overall language arts averages and overall academic averages. Affirmation, belonging, and commitment was a positive predictor of reading achievement scores, yet performance-approach goal orientation was a negative predictor of reading achievement scores. These results offer practical implications for educators, illustrating the importance of academic self-efficacy and value of school success on effort, persistence, and academic achievement.

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CHAPTER I

Introduction

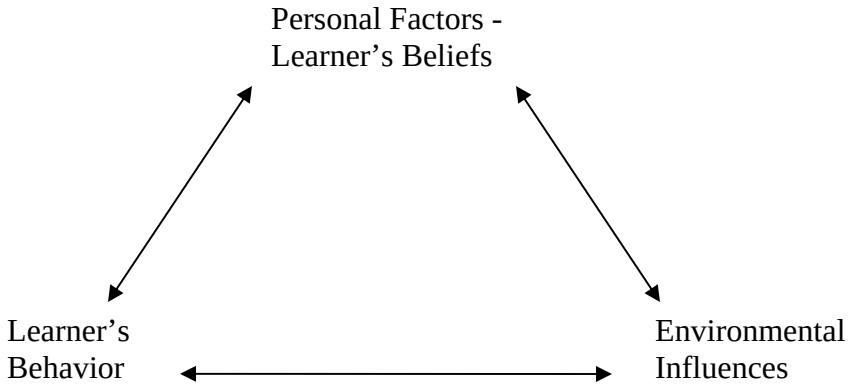
During the 2007-2008 school year, 3.2 million teachers were employed and $489.4 billion spent in projected expenditures on the almost 49.6 million students enrolled in 97,000 elementary and secondary public schools within the United States (National Center for Educational Statistics, NCES, 2007). Despite all of the resources allocated to educating our children, extensive data indicate that the achievement gap still exists in the United States between subgroups, specifically between minority students and their Caucasian classmates. One indicator of the achievement gap in the United States is the data on reading performance, where minority students (except for Asian/Pacific Islander students) ages 9, 13, and 17, and grades four and eight had lower average reading scores than Caucasian students (NCES, 2006a, 2007). Further providing evidence of an achievement gap is the data on students aged 16-24 who dropped out of high school, where 22.1% were Hispanic students and 10.7% were African American students, when compared to only 5.8% who were Caucasian students (NCES, 2008).

As emphasized in the report by the Task Force on Education of Young Adolescents, under the Carnegie Council on Adolescent Development (CCAD, 1989), issues that may contribute to students dropping out of school should not be examined only when students are enrolled in high school, but examined earlier, during their adolescent years. The CCAD (1989) reports that there are several goals educators should strive to promote through their teaching. These goals include having adolescents who are more marketable in an increasingly competitive adult workforce, are more critical in their thinking and more capable of acting ethically, are more physically and mentally fit, and

are more well-rounded, contributing citizens of the United States and the global world. The majority of students in the United States successfully navigate through the maze of education, learning and producing as required, with 73.2 percent of the students in the United States graduating from high school during the 2005-2006 school year (NCES, 2009). However, a large percentage (60.1%) of the students who dropped out of school in the 2006-2007 school year was made up of ethnic minority students (NCES, 2009).

As researchers begin to examine the factors that may contribute to the achievement gaps, they must also examine previous student performances, past events, and their familial and personal cultural milieu. These factors influence the learners' cognitive processes which in turn affect their sense of belonging, ethnic identity, and their motivational beliefs (value of academic success, academic self-efficacy, and achievement goal orientations). The motivational beliefs of individual learners are then reflected in their behavior, specifically through their effort, persistence, procrastination, school attendance, and academic performance. Social cognitive theorists refer to this as the triadic reciprocality, where learning involves an interaction between personal, behavioral, and environmental factors (Bandura, 1986; Pajares, 2002; see Figure 1.1).

Figure 1.1. Triadic reciprocality.



Social-cognitive theorists also believe that learners are active participants in their education, utilizing strategies to regulate their own behaviors and learning. Self-regulated learners utilize cognitive and metacognitive strategies to accomplish academic tasks in order to reach their goals (Pintrich & Garcia, 1991). Of the many components of self-regulated learning, this study will investigate the motivational beliefs of academic value, academic self-efficacy, and components of academic achievement goals.

Although numerous studies in the past have examined the adaptive factors of sense of belonging, ethnic identity, motivational beliefs, and school engagement in relation to behaviors, student achievement, and psychological sense of well-being, these variables have not yet been examined in conjunction with each other. Therefore, the purpose of this dissertation research was to investigate motivational and personal factors which may relate to student engagement and academic achievement. The following sections in this chapter will attempt to explain a segment of the triadic process of interaction, as utilized in this paper, by first addressing the learner's personal factors, self-beliefs, and thought processes (sense of belonging, ethnic identity, academic self-efficacy, value of academic success, achievement goal orientations), and then addressing the learner's behaviors (effort, persistence, procrastination, and attendance).

Student sense of belonging, defined as the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment (Goodenow, 1993b) is an important personal factor. According to the NCES (2006b), 19% of the students who dropped out of high school during their sophomore year reported feeling as though they did not belong. A report from the Task Force on Education of Young Adolescents also emphasized the vital role of the middle grade

schools, specifically indicating the importance of addressing student relationships with others (CCAD, 1989). The report indicated that the problems in middle school education may be due to the lack of sense of belonging, compounded by additional lack of communities in the modern neighborhoods, the lack of extended families, the lack of opportunities for students to bond or establish themselves in big impersonal middle schools, and the systemic lack of community in the middle schools (CCAD, 1989).

These environmental influences compounded students' feelings of being left out or not fitting in, and not only decreased the likelihood of students' participation in extracurricular activities, but also led to academic disengagement (Mahoney, 2000), academic failure (Moya & Motta, 1982), and increased absences (Anderman, E. M., 2002; Goodenow, 1993b; Sanchez, Colon, & Esparza, 2005). Alexander, Entwisle, and Kabanni (2001) indicated that the retention of students, keeping students from moving on to the next grade level with their peers, increased the likelihood of these retained students dropping out of school by as much as seven times that of students who were not retained. Researchers also indicated that for minority adolescents, additional factors may contribute greatly to the higher percentages of their disengagement and drop-out rates when compared with their peers.

Studies indicate that minority students experience additional stress and pressure in educational settings and may not be successful in school due to initial language, social, economical, and psychological differences, as they navigate through the often stressful acculturation process (Dona & Berry, 1994). Minority students may also experience pressure from their family to do well, as the educational success of these minority students are viewed as the key to a better future for the entire family (Gibson & Ogbu,

1991; Lee, 2005). However, despite successful integration strategies in schools through intervention programs such as bilingual and English as second language services (Gibson & Ogbu, 1991; Lee, 2005), minority adolescents still struggle academically, as evidenced by the achievement gap (NCES, 2006a; Thomas & Gadbois, 2007).

Although there exists research regarding the academic achievement of minority students as a categorical group, limited research can be found regarding the variable of ethnic identity and its relation with the variables of motivational beliefs, sense of belonging in a school, school engagement, and academic achievement. Ethnic identity is defined by Henri Tajfel (1981) as "that part of an individual's self-concept that derives from his or her knowledge of membership in a social group (or groups) together with the value and emotional significance attached to that membership" (Phinney, 1992, p. 156). As the classrooms in the United States continue to become more diverse, it is important to investigate the role that ethnic identity plays in students' sense of belonging, school engagement, and subsequent academic outcomes, especially as minority students continue to lag behind the majority ethnic Caucasians in average reading scores (NCES, 2006a, 2007). Therefore, in addition to the relationship between sense of belonging (CCAD, 1989) and academic achievement, ethnic identity, motivational beliefs, and school engagement will also be investigated.

Sense of belonging is reciprocally connected with personal factors and beliefs such as academic self-efficacy, value of academic success, and achievement goals, all of which together may greatly influence academic behaviors and outcomes (Goodenow, 1992, 1993a; Goodenow & Grady, 1993; Roeser, Midgley, & Urdan, 1996; Sanchez et al., 2005; Wentzel & Caldwell, 1997). Such emphasis on the importance of community,

relationships, and sense of belonging echoes Maslow's hierarchy of needs, in which the need for belonging must be satisfied before achievement can be realized (Maslow, 1943).

Motivational beliefs influence student experiences and approaches within various contexts. In this study, academic self-efficacy, value of academic success, and achievement goal orientations will be explored as motivational beliefs. Perceived academic self-efficacy refers to ones' beliefs about their abilities to organize and execute the courses of action required to produce given attainments, specifically in academic tasks (Bandura, 1997). Self-efficacy beliefs differ in many dimensions: level, generality, and strength, and are assumed to be situational and contextualized, and not a general belief as utilized by self-concept and self-esteem research (Linnenbrink & Pintrich, 2002).

Academic self-efficacy is related to several academic indicators, positively related to higher levels of effort and increased persistence (Bandura, 1997) and positively correlated with task value, learning goal orientation, and academic achievement (Liem, Lau, & Nie, 2008; Wolters & Rosenthal, 2000). Academic self-efficacy has also been positively related with sense of belonging, mastery goal adoption, and performance-approach goal adoption (Walker & Greene, 2009). Self-efficacy has been found to be predictive of the adoption of mastery goals (Liem et al., 2008; Walker & Greene, 2009), student choice, effort, and persistence on academic tasks (Schunk, 1990; 1991), and grades (Zimmerman, Bandura, & Martinez-Pons, 1992).

Achievement goals influence the way students think about and approach tasks, reflecting the purpose of one's achievement pursuits (Barron & Harackiewicz, 2001; Urdan, 2004). Achievement goal orientations as mastery, performance-approach, and

performance-avoidance have been a focus of researchers and educators over the years, as they attempt to find predictors of achievement and correlations between students and their academic progress.

In the research regarding goal orientations, there continues to be a debate as to which endorsement of the achievement goal orientations better predicts student academic achievement (Barron & Harackiewicz, 2001; Elliot & Church, 1997; Elliot & Harackiewicz, 1994; Midgley, Arunkumar, & Urdan, 1996; Urdan, 2004; Zusho, Pintrich, & Coppola, 2003). Adding to the ongoing debates are the recent investigations regarding the mastery-approach and mastery-avoidance division, explored in a later chapter (Cury, Elliot, DaFonseca, & Moller, 2006; Elliot & McGregor, 2001; Linnenbrink & Pintrich, 2000).

Researchers have investigated academic self-efficacy, valuation of academic success, and sense of ethnic identity, in conjunction with student sense of belonging (McMahan & Watts, 2002; Oyserman, Bybee, & Terry, 2001; Paschall & Flewelling, 1997; Phinney, 1992; Phinney & Alipuria, 1990; Phinney, Cantu, & Kurtz, 1997; Wright & Littleford, 2002). There is a large and substantial base of research regarding personal achievement goal orientations and cognitive outcomes such as metacognitive and self-regulatory strategies (Middleton & Midgley, 1997; Pintrich & DeGroot, 1990; Pintrich, Zusho, Schiefele, & Pekrum, 2001; Wolters, Yu, & Pintrich, 1996). Substantial research also exists investigating affective domains such as academic self-efficacy (Middleton & Midgley, 1997; Pintrich & DeGroot, 1990; Pintrich et al., 2001) and intrinsic motivation (Harackiewicz & Elliot, 1993). There have been recent works investigating student achievement goals and classroom community in higher education (Rodgers & Summers,

2008; Summers & Svinicki, 2006). However, only a few studies (Anderman, L., 1999; Anderman & Anderman, 1999) can be found at the middle school level regarding personal achievement goal orientations in conjunction with the affective domain of sense of belonging and fewer still in conjunction with the personal characteristic of student ethnic identity.

Therefore, the objective of this study was to build on prior research by investigating the relationships between motivational beliefs (value of academic success, academic self-efficacy, mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance), ethnic identity (affirmation, belonging, and exploration), sense of belonging in school, and school engagement (effort, persistence, procrastination, and attendance), and the relationships between the above variables with adolescent academic achievement (nine-week language arts grades, overall language arts averages, overall academic averages, and statewide standardized reading assessment scores).

CHAPTER II

Review of Literature

The following literature review will focus on past research regarding adolescents' sense of belonging and its relation to school engagement and academic achievement, with an additional focus on ethnic identity. Previous research regarding motivational beliefs and their respective relations to school engagement and academic achievement will also be discussed. Finally, the review will address the importance of student engagement behaviors and their respective relations to academic achievement.

Academic Achievement

Having a successful education is important, as it influences many areas of an individual's life, as well as various economical and political aspects in the world. With changing times and a more competitive work environment, it is important to encourage students to stay motivated and attentive in school, not only to increase the likelihood of students graduating from high school, but also to encourage them to continue on to college. Studies have found a direct link between the amount of education one has and potential earnings, with individuals having higher levels of education earning higher wages (Bishaw & Semega, 2008; U.S. Census Bureau, 2009).

In regards to proficiency in language arts and reading, it is vital that adolescents have the ability to read well, as students who are not proficient in reading "face the possibility of failing their exit exams", which in turn affects students' academic and vocational futures (McEwan, 2001, p. xi). The ability to read or to gain meaning from the printed page is required by society and valued by individuals and employers (McEwan, 2001). In order to do well in school, students must also have the ability to successfully

read and process assignments and textbooks in all content areas, not just in the specific context of reading or literature class. Subsequently, proficiency in reading and language arts affects individuals' graduation from high school, applications to universities and subsequent earnings of degrees, and is an integral facet of one's job searches and daily life.

School Engagement

This study explores the behavioral aspect of the triadic interaction by looking at four areas of student school engagement: effort, persistence, procrastination, and school attendance. Specifically, the amount of effort expended for each activity and the persistence at an activity are viewed as adaptive motivational engagement behavior (Miller, Greene, Montalvo, Ravindain, & Nicholas, 1996; Pintrich & DeGroot, 1990; Shih, 2008). School engagement was predictive of student math standardized test scores in small, moderately large, and large high schools across the United States (Weiss, Carolan, & Baker-Smith, 2010). Effort has been found to be directly predictive of student academic achievement of adolescents in Taiwan (Liu, Cheng, Chen, & Wu, 2009) and undergraduate psychology students (Diseth, Pallesen, Brunborg, & Larsen, 2010). Conducting several analyses with three separate samples, Trautwein, Ludtke, Roberts, Schnyder, and Niggle (2009) found that academic efforts were strong predictors of student academic achievement in both reading and mathematics. Persistence has been found to be positively related with college students' self-reported level of effort, which was then found to be a positive predictor of student performance (Jaramillo & Spector, 2004).

When students are faced with the challenge of being incapable of doing their work due to the level of difficulty in their texts or assignments, many students, despite their personal desire to do well in school, begin to utilize different strategies to avoid a negative reflection of their abilities. These strategies may include the engagement of disruptive and delinquent behaviors (Hirschi & Hindelang, 1977; Maguin, Loeber, & LeMahieu, 1993) or self-handicapping strategies (Thomas & Gadbois, 2007), which further exasperates their lack of school progress. This study will focus on the self-handicapping strategy of academic procrastination.

Procrastination, defined as "failing to perform an activity within the desired time frame or postponing until the last minute activities one ultimately intends to complete" (Wolters, 2003, p. 179), is seen as a maladaptive motivational engagement behavior (Midgley & Urdan, 2001; Schunk, Pintrich, & Meece, 2008; Steel, 2007; Urdan, 2004; Wolters, 2003). In a study involving students enrolled in a liberal arts university, procrastination was found to be negatively related to student grade point averages, and a negative predictor of student grades (Jackson, Weiss, Lundquist, & Hooper, 2003). Additional specific findings regarding the four areas of school engagement, as utilized in this study, are embedded throughout the rest of the literature review.

Adolescents

During adolescence, youth enter a unique situation where they are no longer bound by the rules and restrictions of childhood, and instead, are allowed more independence (Thomas, 2000). Based on Erikson's theory of identity development, adolescence is also the stage of identity formation, where individuals need to resolve their identity crisis or role confusion while examining their relations with peer groups or out

groups (Marcia, 1966). Earlier school and personal life experiences should assist individuals in their self-definition and recognition of their place in society (Thomas, 2000). Depending on their own family support, socioeconomic status, language barriers, parental education, neighborhood, and race, some adolescents receive the support and the education necessary to mature with self-respect, yet many are not supported or are unable to follow a safe path to adulthood (CCAD, 1989).

Without the support of their parents or other stakeholders, adolescents may feel a sense of isolation, especially in urban neighborhoods where the close-knit relationships between neighbors are rare (CCAD, 1989). As they struggle through their search for identity, adolescents may become more vulnerable to high-risk behaviors, such as alcohol, drug, or tobacco use and abuse, criminal mischief and violence, unsafe sex, and school failures, either as a result of the high-risk behaviors or their own withdrawal from school activities (CCAD, 1989). In addition to the struggles that adolescents face during this time of identity formation, ethnic minority youth must also negotiate cultural differences within a social context (Lee, 2005). Many minority youth create their identities based on their experiences at school (Lee, 2005); further emphasizing the importance of exploring minority youth's reported sense of belonging in their school environments, which is explored in a later section.

As students fail to develop cognitive abilities and coping skills, they fall further and further behind in school, often resulting in failing grade level specific exit exams, or by being retained in their grade level, which has been found to be a positive predictor of students dropping out of school (Alexander et al., 2001; CCAD, 1989). However, researchers have found positive correlations between the establishment of meaningful

relationships at school (with teachers, classmates, and other staff) and student academic success (CCAD, 1989; Goodenow, 1993a; Payne, 1995; Wentzel & Caldwell, 1997).

Researchers have also found positive correlations between sense of belonging and school attitudes (Anderman, E. M., 2002; Goodenow, 1993a; Roeser et al., 1996), between student achieved ethnic identity and psychological well-being (Kiang, Yip, Gonzalez-Backen, Witkow, & Fuligni, 2006; Lee & Yoo, 2004; Phinney & Alipuria, 1996; Yip & Fuligni, 2002), and between mastery goal orientations and performance-approach goal orientations with academic performance (Elliot & Church, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000; Midgley et al., 2000). The following literature will give the reader a more comprehensive review of the research involving sense of belonging, ethnic identity, motivational beliefs, and school engagement.

Sense of Belonging

Student sense of belonging in school, defined as “students’ sense of being accepted, valued, included, and encouraged by others (teachers and peers) in the academic classroom setting and of feeling oneself to be an important part of the life and activity of class” (Goodenow, 1993a, p. 25), has been found to positively influence academic, psychological, and behavioral outcomes. According to Maslow (1943), the need for belonging must be met before individuals can attain their higher needs for knowledge and achievement. Knowing that there is a personal connection between oneself and teachers or others at school may be important in maintaining their motivation to do well, as adolescents then believe they have additional available support to be successful, especially for those who lack the academic support at home (Goodenow, 1993b).

Sense of belonging has been investigated under several constructs: group membership (the peer group with which a student is most closely associated; Wentzel & Caldwell, 1997; Zeichner, 1978), school belonging (participating in school and identifying with school; Finn, 1989), and sense of community (a feeling of belongingness within a group; Osterman, 2000). Regardless of the terminology, consistent findings have indicated the importance of adolescents' sense of belonging in school, especially during the years of identity exploration, and its influence on academic self-efficacy (Freeman, Anderman, & Jensen, 2007; Roeser et al., 1996), valuation of academic work (Freeman et al., 2007, Goodenow, 1992, 1993a; Goodenow & Grady, 1993; Sanchez et al., 2005), school engagement (Goodenow, 1993a; Goodenow & Grady, 1993; Sanchez et al., 2005), and academic grades (Anderman & Anderman, 1999; Goodenow, 1993a, 1993b; Hagborg, 1998a, 1998b; Roeser et al., 1996; Wentzel & Caldwell, 1997; Zeichner, 1978).

Juvonen's (2006) proposed model demonstrates a circular association, in which student relationships with teachers and classmates directly affect student sense of belonging, which in turn directly affects student academic engagement and social behaviors, which then returns to affect sense of belonging. The following addresses the relations between sense of belonging and motivational beliefs, sense of belonging and school engagement, and sense of belonging and academic achievement.

Sense of Belonging and Motivational Beliefs

Goodenow (1992) designed an 18-item Psychological Sense of School Membership (PSSM) scale to measure adolescents' perceived belonging or psychological membership in the school environment and found that students' sense of school membership significantly impacted middle school students' motivational beliefs of

expectancies for school success, value of schoolwork, and school motivation. Sense of belonging was also positively correlated with valuation of course work (Anderman, L., 2003; Goodenow, 1993b; Goodenow & Grady, 1993) and self-efficacy (McMahon, Wernsman, & Rose, 2009). While examining the relationship of motivation and achievement to classroom belonging, Goodenow (1993a) found that expectancy for academic success was a primary predictor of class effort and grades among sixth and eighth grade students, although sense of belonging was also significantly associated with these outcomes.

In a study examining classroom climate and school belonging in relation to language arts, math, and science self-efficacy, it was found that sense of belonging was the most important contextual influence on student self-efficacy when classroom and school environmental variables were examined together (McMahon et al., 2009). Students' sense of belonging was also found to be significantly correlated with academic self-efficacy in a middle school sample (Roeser et al., 1996) where children who reported a higher sense of academic self-efficacy experienced less rejection by their peers than students who had lower self-efficacy beliefs.

Several studies have also found sense of belonging and achievement goal orientations to be correlated. Anderman and Anderman (1999) found that the adoption of mastery goal orientations was positively related to fifth and sixth grade students' sense of belonging; however, sense of belonging was found to be negatively correlated with sixth grade students' adoption of performance goal orientations. Similar correlations were found in a fifth grade sample by Anderman (1999).

Sense of belonging was also reported to be predictive of the type of achievement goals adopted by middle school students, such that students who reported higher senses of belonging were more likely to adopt mastery goals and less likely to adopt performance goals (Anderman & Anderman, 1999). However, these findings contradict a study involving undergraduate female engineer students, where sense of belonging was found to be a positive predictor of mastery-approach goal orientations and performance approach goal orientations, but not predictive of mastery-avoidance or performance-avoidance goal orientation (Yu, Trenor, Waight, Zerda, & Sha, 2009).

Roeser et al. (1996) found that students' self-reported feelings of sense of belonging were positively correlated with personal mastery goal orientations adoption, but found no correlations between sense of belonging and the adoption of performance goals.

Sense of Belonging and School Engagement

Sense of belonging has also been found to be correlated with school engagement variables, positively associated with students' self-reported persistence (Goodenow, 1992; Goodenow & Grady, 1993) and effort (Goodenow, 1992, 1993a, 1993b; Goodenow & Grady, 1993; Sanchez et al., 2005), and negatively associated with absences and tardiness (Anderman, E. M., 2002; Goodenow, 1993b; Sanchez et al., 2005). In a study with junior high school students, Goodenow (1992) found psychological sense of school membership to be positively related to student expectancy, value of school work, motivation, effort, and persistence, and to be predictive of student persistence (Goodenow, 1992) and effort (Goodenow, 1993b). Class belonging has also been found to be positively related with middle school students' perceived teacher

support, perceived peer support, perceived belonging and alienation, expectancy to do well in class, and value of course work (Goodenow, 1993a).

Hagborg (1994) found results similar to those found by Goodenow, where school membership was positively related to student engagement, effort, and absences. Goodenow (1993b) also found that school membership was negatively correlated with middle school students' absences and tardies. Another study also found sense of belonging to be negatively related to middle school and high school student absences (Anderman, E. M., 2002). In a study which investigated the role of sense of belonging and academic adjustment of Latino high school students, Sanchez et al. (2005) found that sense of belonging significantly predicted student motivation, effort, and absenteeism, such that students who reported higher senses of belonging were more motivated, put forth more effort and were less likely to be absent.

Rejection, feeling as if one did not belong or was not supported, has been found to be a negative predictor of student engagement. In studies conducted with students enrolled in introductory psychology courses, rejection has been found to lead to lower levels of student effort and persistence in tasks (Baumeister, DeWall, Ciarocco, & Twenge, 2005) and was predictive of reduced persistence, although students who had higher self-esteem persisted slightly longer than students who had low self-esteem (Sommer & Baumeister, 2002).

Sense of Belonging and Academic Achievement

Sense of belonging has been found to be related to student academic achievement, specifically student grade point averages (Anderman, E.M., 2002; Anderman, L., 1999; Anderman & Anderman, 1999; Goodenow, 1993b; Hagborg, 1994, 1998b; Wentzel &

Caldwell, 1997). In a middle school study examining student school membership, it was found that sense of belonging was positively related not only to motivation and time spent on homework, but also to student grades (Hagborg, 1998a). Goodenow (1993b) found sense of belonging to be predictive of middle school students' grade point averages, a result also found by Wentzel and Caldwell (1997) in their study involving sixth graders. However, contradicting findings found sense of belonging to be unrelated to academic achievement (Booker, 2004; Nichols, 2006), and also unrelated and not predictive of student grade point averages (Sanchez et al., 2005). In the next sections, belonging will continue to be explored, not as a sense of belonging in a school, but as a sense of belonging or membership to an ethnic group, a component of ethnic identity (Phinney & Ong, 2007).

Ethnic Identity

Ethnic identity refers to one's sense of self, or the degree to which one views oneself, in terms of membership in a particular ethnic group (Phinney, 1990). Ethnic identity is salient, changing in different contexts and in response to different social psychological and contextual factors, and depending on individual beliefs, values, ethnic group norms, social experiences, ethnic community, and national community (Phinney, Horencyzk, Liebkind, & Vedder, 2001; Phinney & Ong, 2007). Ethnic identity formation involves an exploration of the meaning of one's identity which leads to a secure sense of oneself as a member of a group, or a strong ethnic identity. However, unsuccessful resolution of identity issues or lacking clarity regarding oneself and one's place in a group results in identity diffusion, or low ethnic identity (Phinney, 1992).

An individual who has obtained an achieved ethnic identity has positive feelings regarding one's ethnic group, has positive self-evaluations, has a secure sense of one's ethnicity, and has the ability to find resolutions to conflicts about one's ethnicity (Phinney et al., 2001). Having a strong ethnic identification and a positive host orientation, being bicultural, has been found to be related to higher self-esteem (Bracey, Bamaca, & Umana-Taylor, 2004; Phinney & Alipuria, 1990; Phinney et al., 1997; Phinney & Chavira, 1992; Portes & Zady, 2000) and to psychological well-being (Kiang et al., 2006; Phinney et al., 2001; Yip & Fuligni, 2002; Yoo & Lee, 2005). Ethnic identity and racial-ethnic identity have both been examined in past studies, and often used interchangeably as they are very similar. However, it is important to note the underlying differences, with Phinney's (1992) ethnic identity referring to exploring and affirming cultural histories, traditions, and practices, and racial identity referring to group identity resulting from being socialized and resulting from reactions to racial oppression (Cokley & Chapman, 2008). Although this study examines ethnic identity, in areas with sparse studies, racial identity research will be utilized.

Ethnic Identity and Motivational Beliefs

Ethnic identity has been positively correlated to self-esteem (Martinez & Dukes, 1997; Paschall & Flewelling, 1997; Phinney & Alpuria, 1990; Phinney & Chavira, 1992). Osyerman, Harrison, and Bybee (2001) also found that racial identity added significantly to the prediction of academic self-efficacy, when examining gender differences in a sample of 217 African American eighth grade students. Specifically, it was found that awareness of racism increased feelings of academic self-efficacy in boys, whereas it decreased feelings of academic self-efficacy in girls (Oyserman et al., 2001).

The correlation between ethnic identity and achievement goal orientations are limited, with most of the studies utilizing ethnicity as a categorical variable. However, these few studies are inconclusive. Zusho, Pintrich, and Cortina's (2005) research was one of the few studies of achievement goal orientations that included ethnic identity as a variable of interest, but it was dropped from analyses because they did not find any ethnic identity interactions for the Asian-American group (Zusho et al., 2005). Instead, they utilized ethnicity as a self-identified categorical variable. Results from the post-test analysis indicated that though there were no differences for mastery goals, interest, and competence perceptions between Asian-Americans and Anglo-Americans, there were differences in the level of fear of failure, a construct that is indicative of the adoption of performance-avoidance goals (Zusho et al., 2005). Asian-American undergraduates had higher levels of fear, higher levels of anxiety, and higher tendencies to adopt performance-avoidance goals than Anglo-Americans (Zusho et al., 2005).

Middleton and Midgley (1997) found different results from that of Zusho et al. (2005). They found that sixth grade African American girls reported higher levels of mastery goal orientations than African American boys and European American girls, and found no significant differences within any of the other goal orientations. In another article which also utilized ethnicity in a categorical sense, Kaplan and Maehr (1999) found inconclusive differences between middle school students' endorsement of mastery goals and endorsement of ego-related goals. The empirical evidence documenting the utility of ethnic identity is lacking and limited when exploring ethnicity not as a categorical variable, but as an identity.

Few studies (Oyserman et al., 2001) regarding ethnic identity and academic self-efficacy could be found. Therefore, studies which include additional affective domains will be shared. Research indicates that an achieved ethnic identity can be positive in the affective development of minority individuals, specifically in promoting psychological well-being and influencing personal adjustments in adolescence (Phinney, 1992; Phinney & Alipuria, 1990; Phinney et al., 1997; Phinney et al., 2001; Zaff, Blount, Phillips, & Cohen, 2002). In utilizing the 1992 version of Jean Phinney's Multigroup Ethnic Identity Measure (MEIM), researchers found that ethnic identity was a significant predictor of self-esteem, where higher group identity was related to higher self-esteem (Martinez & Dukes, 1997; Phinney & Alipuria, 1990, 1996; Phinney et al., 1997). Utilizing different ethnic identity measures, Fuligni et al. (2005) found the strength of ethnic identification among ninth grade students to be positively associated with students' belief regarding the value of school, as well as with the utility of education.

Additionally, in an examination of the structure and construct validity of Phinney's MEIM, Roberts et al. (1999) found ethnic identity to be positively associated with higher self-esteem and negatively related with loneliness and depression of participants in grades six through eight. The strength of adolescents' ethnic identity was also associated with academic attitudes, rather than the specific self-selected ethnic labels in a study conducted by Fuligni et al. (2005). Fuligni et al. found that ninth graders who held a more positive regard for their ethnic groups were more positive about education and believed that they were more valued and respected in their schools, than their peers who had lower regards for their ethnic groups. Similarly, in examining African-American adolescences' responses to questions regarding their educational beliefs and racial

identity, Chavous et al. (2003) found that adolescents who had a stronger group affiliation and pride (stronger ethnic identity) had more positive academic beliefs than those who had less group affiliation and had less positive group affect.

Ethnic Identity and School Engagement

Not only has ethnic identity research been limited with respect to self-efficacy and value of academic achievement, it has also been largely ignored in the research regarding student engagement. In regards to ethnic identity, Phinney et al., (1997) found that ethnic identity was highly correlated with self-esteem, and thus may indirectly contribute to higher academic achievement. Previous ethnic identity research have discussed the implications of ethnic identity on participant psychosocial well-being and coping skills, with a few studies mentioning implications regarding self-regulated learning strategies. A consistent correlation has been found between the level of ethnic identity endorsement and positive affective outcomes. It may be reasonable to expect a positive academic outcome with higher ethnic identity endorsements as well. If so, perhaps educators can better assist struggling minorities by emphasizing the importance of having strong senses of belonging with their ethnic group, or by supporting students in their exploration and behaviors so they can develop stronger ethnic identities.

Ethnic Identity and Sense of Belonging

As indicated previously, studies which have investigated students' sense of belonging to an ethnic group have reported correlations between ethnic identity and student psychological well-being (Phinney, 1992; Phinney & Alipuria, 1990; Phinney et al., 1997; Phinney et al., 2001; Zaff et al., 2002). However, another aspect of the sense of

belonging and ethnic identity literature explores rejection (the lack of sense of belonging) and alienation (the lack of ethnic identity). Alienation has been defined as a lack of sense of belonging, feeling cut off from family, friends, and/or school (Bronfenbrenner, 1986). Students who are already at risk and are unable to attain academic success due to additional factors within the classrooms begin to feel more estranged from their classmates (Kagan, 1990). This disengagement from school leads to feelings of apathy, alienation, increased absenteeism and hostility and subsequently increased potential of dropping out of school (CCAD, 1989; Kagan, 1990). Alienation has also been linked to student academic achievement, where alienation scores have been negatively correlated with 10th through 12th grade students' grade point averages and student socialization (Moyer & Motta, 1982). Although these studies indicate the impact of alienation on school attitudes and academic achievement, the findings are limited.

Although the ethnic identity research is more limited than that of sense of belonging with respect to motivational beliefs and academic achievement, the research of both, with respect to affective domains, have had similar findings. Ethnic identity (Phinney, 1992) and student sense of belonging (Goodenow, 1993a) are both strongly correlated with affective domains: increased psychological well-being, increased use of coping strategies, and fewer behavior problems. With such similar constructs, one could venture to project ethnic identity to have similar outcomes and correlations as those that have been found with student sense of belonging, such that students who have higher ethnic identities would also have higher academic self-efficacy, more adaptive goal orientations, and higher grades. Based on these projections, this study explored the

relations between ethnic identity and sense of belonging with respect to school engagement and academic achievement.

Ethnic Identity and Academic Achievement

As stated previously, most of the research involving ethnic identity have investigated student affective domains, however there does exist a few studies that have investigated ethnic identity and academic achievement (Altschul, Oyserman, & Bybee, 2006; Oyserman et al., 2003). One such study found that ethnic identity was indirectly linked to the grade point averages of African American university students via academic self-concept and devaluing academic success (Cokley & Chapman, 2008).

As mentioned previously, some studies regarding cultural identity have utilized the vocabulary of racial identity (Chavous et al., 2003; Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008; Oyserman et al.,2003) instead of ethnic identity (Cokley & Chapman, 2008; Fuligni et al., 2005; Guzman, Santiago-Rivera, and Haase, 2005; Phinney, 1992), although the concepts may be similar. These studies have found some conflicting results regarding ethnic identity.

Although one racial identity study found a correlation between students' weaker group affiliations and rates of dropping out of high school, they failed to find significant differences between racial identity groups (as indicated by level of affiliation and not as a racial category) and academic achievement as a separate variable (Chavous et al., 2003). Similarly, Guzman et al. (2005) failed to find a relationship between high school students' ethnic identity and academic achievement. While investigating racial discrimination, racial identity, and academic achievement, Chavous et al. (2008) found that stronger racial identity related to higher achievement motivation for eighth and

eleventh grade students, and acted as a buffer against the impact of racial discrimination, although these differed amongst boys and girls. Having a stronger racial centrality was predictive of school importance attitudes and student self-concept in boys, but not girls. Additionally, when interaction effects were added, racial centrality was no longer a predictor of academic achievement.

Examining the racial identity of African –American middle school students, Oyserman et al. (2003) found that having a more positive sense of belonging with an in-group, its history, traditions, and future, also known as connectedness, positively predicted higher grades, increased study time, increased attendance, and increased strategy use in male participants. It was also found that embedded achievement, endorsing the belief that achievement of one in-group member assists others in the group, positively predicted higher grades in female participants (Oyserman et al., 2003). Altschul et al. (2006) also found that two components of racial-ethnic identity, connectedness and embedded achievement, were related to student grade point averages, such that eighth graders high in both connectedness and embedded achievement attained higher grade point averages than their peers. Students high in connectedness and another component, awareness of racism, continued to obtain higher grade point averages through ninth grade (Altschul et al., 2006). With the limited and conflicting studies examining the relation between ethnic identity and academic achievement, the need for further studies is evident.

Although there exists research indicating the positive correlations between ethnic identity and student well-being and self-esteem, little research can be found regarding ethnic identity and academic self-efficacy, valuation of school, goal orientations

adoption, and academic achievement. Therefore, this study hopes to add to existing research by investigating the relationship between ethnic identity and academic self-efficacy, achievement goal orientations, and academic achievement.

Learners' academic behaviors, one of the key components of the triadic reciprocality, have been linked to academic outcomes in many studies. One's cognitive processes and motivational beliefs regarding one's achievement goals, judgments of personal competence (self-efficacy), and value of academic success lead to varying degrees of student engagement behaviors, both adaptive and maladaptive. This next section addresses the areas of learners' motivational beliefs as investigated in this study: academic self-efficacy, value of academic success, mastery-approach goal orientations, mastery-avoidance goal orientations, performance-approach goal orientations, and performance-avoidance goal orientations.

Learners' Motivational Beliefs

In regards to student learning and academic achievement, social-cognitive researchers emphasize the importance of motivational components like expectancy (e.g., self-efficacy or academic self-efficacy) and value (e.g., task value or valuation of school success). Although this study does not utilize the social-cognitive expectancy-value model theory as utilized by Eccles and Wigfield (2002), this current study recognizes the importance of both, and the impact value and expectancy have on academic engagement and performance. Achievement goal theory is another area of motivational research that has been investigated and found to influence school engagement and academic achievement. Therefore, the author will investigate how one's motivational beliefs, expectancy-value and achievement goal orientations, relate to student school engagement

behaviors of effort, persistence, procrastination, and attendance, and to student academic performance.

Academic Self-Efficacy

Previous research has shown the adaptiveness of having higher academic self-efficacy beliefs, defined as beliefs in one's capabilities to organize and execute the courses of action required to produce given attainment (Bandura, 1997). Academic self-efficacy has been found to be positively related to student engagement (effort through the use of cognitive strategies and persistence; Bouffard-Bouchard, Parent, & Larivee, 1991; Pintrich & DeGroot, 1990), performance (grades; Pintrich & DeGroot, 1990; Skidmore, 2003), value (Liem et al., 2008; Wolters & Rosenthal, 2000), achievement (Bouffard-Bouchard et al., 1991; Kaplan & Maehr, 1999; Roeser et al., 1996; Wolters & Rosenthal, 2000; Zusho et al., 2003), and belonging (Walker & Greene, 2009). However, academic self-efficacy was found to be negatively associated with procrastination (Skidmore, 2003; Steel, 2007; Wolters, 2003) and performance-avoidance goal orientation (Liem et al., 2008).

In a study which investigated the relation between students' task value, self-efficacy, and learning and performance goal orientations and implementation strategies used by eighth grade students, self-efficacy was positively correlated with task value, learning goal orientation, and standardized achievement (Wolters & Rosenthal, 2000). Liem et al. (2008) found that ninth graders' reported self-efficacy were positively related to value, mastery goal orientation, performance-approach goal orientation, and English test scores. Conducting several analyses with three separate samples, Trautwein et al.

(2009) found that competence beliefs were correlated with effort and student achievement in both reading and mathematics.

Middle school and high school students who reported high academic self-efficacy were found to be more successful in solving conceptual math problems, regardless of cognitive abilities, were more persistent, and had more correct responses than students who reported lower academic self-efficacy (Bouffard-Bouchard et al., 1991).

Self-efficacy was found to be negatively correlated with performance-avoidance goal orientation and disengagement (Liem et al., 2008). Examining learning strategies, including procrastination, and motivational orientation variables and their predictability on final examination scores of college students, student self-efficacy was found to be negatively correlated with procrastination and positively predictive of student final exam scores (Skidmore, 2003).

Wolters (2003) found that self-efficacy was related to procrastination, such that college students who reported stronger self-efficacy were more likely to start on tasks in a timely manner (not procrastinate) than students who reported lower levels of self-efficacy. Wolters also found that individual self-efficacy and work avoidance were the two strongest independent predictors of procrastination. As these results may differ for secondary students, it is important to further investigate the relationship between procrastination and academic self-efficacy.

Value of Academic Success

Higher beliefs of the value of academic success (the extent to which students place importance on doing well and succeeding in school; Fuligni et al., 2005) and task value (students' beliefs about the importance or utility of a course; Zusho et al., 2003),

are also found to be adaptive to academic achievement. While investigating students enrolled in a college chemistry class, value of academic success was found to be positively correlated with academic achievement (Zusho et al., 2003).

Intrinsic value was found to be positively correlated with academic achievement in a sample of seventh graders (Pintrich & DeGroot, 1990). In an investigation of ninth grade students in Singapore, task value was also found to be positively related to mastery goal orientation and performance-approach goal orientation, negatively related to performance-avoidance goal orientation, positive predictors of student adoption of mastery and performance-approach goal orientations, and negative predictors of student adoption of performance-avoidance goal orientation (Liem et al., 2008). However, Wolters and Rosenthal (2000) failed to find correlations between academic achievement and task value (student's beliefs about the usefulness, importance, and appeal of their course work) with their eighth grade sample, although task value was found to be associated with student effort.

The value of academic success (or value of schoolwork) has also been investigated with student sense of belonging, ethnic identity, and school engagement, as explored in previous sections (Freeman et al., 2007; Fuligni et al., 2005; Goodenow, 1992, 1993a; Goodenow & Grady, 1993).

Achievement Goal Orientations

Achievement goal theory explains the purpose of one's achievement pursuits and has been a framework used for understanding achievement motivation (Urdan, 2004). Studies have shown that achievement goals (the purpose of approaching, engaging in, and responding to achievement situations; Zusho et al., 2003) can be manipulated and

influenced by students' approach to education, personal beliefs regarding intelligence, past experiences, the classroom environment (Midgley & Urdan, 2001; Patrick, Turner, Meyer, & Midgley, 2003; Urdan, 1997, Urdan & Midgley, 2003; Wolters, 2003), and socio-emotional relationships with teachers, parents, and classmates (Patrick et al., 2003). The adoption of specific goal orientations influence how individuals interpret, approach, experience, and react to different situations, and may affect many different educational outcomes (Elliot & Church, 1997; Harackiewicz & Elliot, 1993; Pintrich & Schunk, 2002; Wolters, 2004; Zusho et al., 2003).

Many studies have also indicated the various perspectives in regards to the role of the two general achievement goals (mastery goal orientation and performance goal orientation) and the differences between the dichotomous, trichotomous, or two-by-two frameworks. The dichotomous framework consists of only the mastery goal orientation and the performance goal orientation (Pintrich & Schunk, 2002; Zusho et al., 2003). The trichotomous framework includes mastery goal orientation, but separates performance goal orientation into performance-approach goal orientation and performance-avoidance goal orientation (Elliot & Church, 1997; Grant & Dweck, 2003; Harackiewicz et al., 2000; Pintrich & Schunk, 2002; Urdan, 1997; Wolters, 2004).

Specifically, the more recent 2 x 2 framework will be utilized in this study (see Figure 2.1). In the 2 x 2 framework, achievement goals are differentiated on two dimensions, how competence is defined and how competence is valenced (Elliot & McGregor, 2001). Competence is defined either as mastery, an absolute/interpersonal standard (whether a person has acquired understanding, mastered a task or improved one's performance, or fully developed one's knowledge/skill) or as performance, a

normative standard (whether a person performed better than others; Elliot & McGregor, 2001). Competence is valenced in that it is either viewed as positive (desirable possibility) or negative (undesirable possibility), or more specifically as approach and avoidance (Elliot, 1999; Elliot & McGregor, 2001).

Mastery-approach goal orientation. Mastery goal orientation (also known as learning goals, Dweck & Leggett, 1988; Grant & Dweck, 2003; task-focused goals,

Table 2.1. The 2x2 achievement goal framework.

		Valence	
		Positive (approaching success)	Negative (avoiding failure)
Definition	Absolute/intrapersonal Standard (mastery based)	Mastery-Approach Goal Orientation	Mastery-Avoidance Goal Orientation
	Normative Standard (performance based)	Performance-Approach Goal Orientation	Performance-Avoidance Goal Orientation

Note. From "A 2 x 2 Achievement Goal Framework" by A. J. Elliot and H. A. McGregor, 2001, *Journal of Personality and Social Psychology, 80,* p. 502. Adapted with permission of the author.

Kaplan & Maehr, 1999; and task-mastery goals; Meece, Blumenfeld, & Hoyle, 1988) has been generally defined as a focus on learning, mastering a task for self-improvement or to meet self-set standards, developing additional skills, improving competence, attempting to overcome challenges, and attempting to gain additional understanding (Elliot & Harackiewicz, 1994; Harackiewicz & Elliot, 1993; Pintrich & Schunk, 2002; Zusho et al., 2003). In the 2 x 2 framework, mastery goals are labeled as mastery-approach goals because they have been construed as positively valenced in the dichotomous and trichotomous frameworks.

Research studies have consistently found that mastery goal orientation adoptions lead to generally positive patterns of motivational beliefs which include self-efficacy, task value, performance outcomes, and positive patterns of behavioral beliefs which include task involvement, persistence, and effort (Cury et al., 2006; Elliot & Church, 1997; Pintrich et al., 2001; Wolters et al., 1996). In a study with undergraduate students, Elliot and Church (1997) found that the adoption of mastery goal orientation correlated with increased intrinsic motivation. Regarding school engagement and academic achievement, research indicates that students who adopted mastery orientation put forth more effort in their learning (Pintrich & Schunk, 2002), had higher grade averages (Zusho et al., 2003), and had higher levels of persistence (Wolters, 2003, 2004).

One study also reported that eighth grade students who adopted learning (mastery) goals were more likely to report using strategies which would help them increase their efforts and persistence for math tasks (Wolters & Rosenthal, 2000). The adoption of mastery goal orientation by elementary, middle, and high school students was also found to correlate positively with academic self-efficacy (Linnenbrink, 2005; Middleton & Midgley, 1997), increased effort and persistence (Elliot, 1999; Wolters, 2004), lowered levels of procrastination (Wolters, 2003, 2004), and higher grade point averages (Witkow & Fuligni, 2007). However, previous research also indicates inconsistent findings.

The adoption of mastery goal orientation was positively predictive of higher scores on math exams in a study by Linnenbrink (2005). However, the adoption of mastery goal orientation was not found to be predictive of student grades by Wolters (2004) and Cury et al. (2006). Another inconsistency was found in a study conducted by

Sideridis (2005), who did not find any significant correlations between mastery goal orientation and effort, persistence, and achievement among fifth and sixth grade students working on math exercises.

Mastery-avoidance goal orientation. The second goal identified in the 2 x 2 framework is mastery-avoidance goals, in which competence is defined in terms of the absolute/interpersonal requirements of the task or attainment, and is negatively valenced, where the focus is on avoiding a negative possibility (Elliot & McGregor, 2001). Mastery-avoidance has been largely defined as when students adopt achievement goals which focus on avoiding the loss or the stagnation of skills and competence (Kaplan, Middleton, Urdan, & Midgley, 2002) and avoiding making mistakes or doing the task incorrectly (Schunk et al., 2008). Examples of mastery-avoidance goals include striving to avoid misunderstanding, striving to avoid failing to learn, striving to avoid leaving work incomplete, and striving to avoid losing one's existing capabilities (Elliot & McGregor, 2001). Additional examples include fearing that one is going to forget what has previously been learned or fearing to miss an opportunity to master a task (Kaplan et al., 2002).

Mastery-avoidance goal adoption was found to be negatively associated with academic performance of middle school students and not predictive of student performance (Cury et al., 2006). In an investigation of adolescent achievement goals and school experiences, Witkow and Fuligni (2007) found that mastery-avoidance goal orientation was negatively associated with student grade point averages. Mastery-avoidance goals were positively predictive of disorganization, test anxiety, worry, and emotionality among college students (Elliot & McGregor, 2001). However, processing

strategies and SAT scores were not found to be significantly correlated with mastery-avoidance goal adoption (Elliot & McGregor, 2001). The literature focusing on the positive correlations between mastery goal orientation and academic outcomes is comprehensive, yet the literature regarding mastery-avoidance is in its infancy. With few studies which involved the investigation between mastery-avoidance goal adoption and academic achievement or motivational beliefs in the lower grades, this current research will add to this area of need by investigating middle school student engagement behaviors and student academic performance with mastery-avoidance goal adoptions. The following section further investigates performance-approach goal orientation with regards to academic achievement.

Performance-approach goal orientation. Performance-approach goal orientation (also known as ability-focused goals; Maehr & Midgley, 1996; and ego-oriented goals; Midgley et al., 1996) is defined in normative terms and is positively valenced (Elliot & McGregor, 2001). It has been largely defined as when students adopt achievement goals that focus on attaining success, demonstrating competence relative to others, attempting to achieve over others, attempting to overcome others, and seeking to gain recognition for high performance levels (Elliot & Church, 1997; Grant & Dweck, 2003; Pintrich & Schunk, 2002; Urdan, 1997; Urdan & Midgley, 2001; Zusho et al., 2003).

Several studies indicated that the adoption of performance goals was actually beneficial to student academic achievement (Harackiewicz et al., 2000; Witkow & Fuligni, 2007). Sideridis (2005) found that performance-approach was positively associated with effort, persistence, and achievement of fifth and sixth grade students. One study of middle school students indicated that the adoption of performance-approach goal

orientation was a positive predictor of student performance (Cury et al., 2006), a result also found in a high school sample (Witkow & Fuligni, 2007). In a study with undergraduate students, Elliot and Church (1997) found that the adoption of performance-approach goal orientation correlated with higher grades. College students who adopted performance goals had higher grades in their psychology course, had higher overall semester grade point averages, and had higher levels of long-term academic performance than those who did not adopt performance goals (Harackiewicz et al., 2000).

Several other studies have also found similar correlations regarding performance-approach goal adoption by college students and grades (Elliot & McGregor, 2001; Grant & Dweck, 2003; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Wolters, 2004). In an investigation involving college students' endorsements of performance goal orientation, it was found that initial high levels of self-efficacy, task value, and the use of rehearsal strategies were positively associated with academic achievement, although these levels decreased over time (Zusho et al., 2003).

However, research involving performance goal adoptions have yielded inconsistent findings. When compared to mastery goal orientation, some studies found performance-approach to be less beneficial in the engagement areas of persistence and effort, (Middleton & Midgley, 1997; Pintrich & Schunk, 2002; Wolters, 2004), and math achievement (Sideridis, 2005). Individuals who adopted a performance goal orientation also indicated putting forth less effort to tasks, failed to persist in the face of difficulties, and had more negative feelings about school (Urdan, 1997). The adoption of performance goal orientations was also found to correlate with the development of maladaptive

activities in the form of learned helplessness (Pintrich & Schunk, 2002), avoidance in seeking help (Middleton & Midgley, 1997), and procrastination (Wolters, 2003, 2004).

Another researcher indicated that students who adopted performance-approach goals scored lower on math exams than students who did not adopt performance-approach goals (Linnenbrink, 2005). Other researchers did not find performance-approach to be individually predictive of motivational outcomes of effort, persistence, procrastination (Wolters, 2003), or academic self-efficacy (Middleton & Midgley,1997). The findings from this study should add to the research regarding the adoption of performance-approach goals.

With respect to performance-avoidance goal orientation, the correlations with academic strategies and achievement were found to be less positive, as indicated in the following section.

Performance-avoidance goal orientation. The last cell of the 2 x 2 framework, viewed as normative and negatively valenced (Elliot & McGregor, 2001), is performance-avoidance goal orientation. This goal orientation has been defined as when students adopt achievement goals that focus on avoiding failure, avoiding judgments of low ability (Elliot & Harackiewicz, 1994), avoiding unfavorable judgments of competence (Elliot & Church, 1997), avoiding seeming incompetent (Barron & Harackiewicz, 2001), avoiding seeming dumb or inferior (Pintrich & Schunk, 2002; Schunk et al., 2008), and creating impediments to successful performance by actions or inactions (Urdan & Midgley, 2001).

Middleton and Midgley (1997) found that the adoption of performance-avoidance goal orientation was negatively predictive of academic self-efficacy. Performance-

avoidance goal adoption was also negatively associated with persistence, exam scores, and performance, and positively associated with procrastination (Wolters, 2003). Cury et al. (2006) found adoption of performance-avoidance to be negatively predictive of middle school student performance. The adoption of performance-avoidance goals by college students lead to lower grades (Elliot & Church, 1997; Elliot & McGregor, 2001; Harackiewicz et al., 2000), to lowered persistence (Wolters, 2004), to lowered intrinsic motivation (Elliot & Church, 1997), to more self-handicapping strategies (Midgley & Urdan, 2001; Urdan & Midgley, 2001), and to increased procrastination (Wolters, 2003, 2004). Elliot and McGregor (2001) also found the endorsement of performance-avoidance goal orientation to be a negative predictor of academic achievement amongst college students.

Studies which incorporated secondary participants had similar findings as those with college students. In investigating fifth and sixth graders, Sideridis (2005) failed to find the adoption of performance-avoidance goals to be correlated with effort or persistence. Lower achieving middle school students who cared about protecting their academic image, though they may not care enough to use appropriate learning strategies, were found to utilize self-handicapping strategies more frequently than their peers (Midgley & Urdan, 2001). It was also found that performance-avoidance goals were positively correlated to self-handicapping strategies in seventh grade students (Urdan & Midgley, 2001). However, Witkow and Fuligni (2007) failed to find any significant association between performance-avoidance goal orientation and student grade point average in a study involving high school students.

Together, these studies indicate that the adoption of mastery-approach goals and performance-approach goals were superior to the adoption of performance-avoidance goals, which is further supported by other studies (Barron & Harackiewicz, 2001; Elliot & Church, 1997; Elliot & McGregor, 2001; Elliot, Shell, Bouas Henry, & Maier, 2005; Pintrich & Schunk, 2002; Urdan & Midgley, 2001). The few research findings regarding mastery-avoidance goals are not conclusive enough to include in comparative statements.

Most of the past research studies regarding achievement goal theory have included the college population (Barron & Harackiewicz, 2001; Elliot & Church, 1997; Elliot & Harackiewicz, 1994; Grant & Dweck, 2003; Harackiewicz & Elliot, 1993; Wolters, 2003), with a few focused on high school populations (Elliot et al., 2005; Urdan, 2004), and others at the elementary and middle school level (Linnenbrink, 2005; Middleton & Midgley, 1997; Sideridis, 2005; Urdan & Midgley, 2001; Wolters, 2004; Wolters et al., 1996). This study will bring additional implications for the middle school population. As indicated by Schunk et al. (2008), it is also important to clarify the relations among the different goals and their links to various outcomes.

As the 2 x 2 framework looks at achievement goals defined in terms of absolute/intrapersonal or normative terms, it can be hypothesized that student's reported sense of belonging could be correlated with achievement goal orientations. This may be explained from the definition of goal orientations, due to the competitive nature of the normative terms, where individuals are striving to be better or win against their classmates. Such normative actions do not necessarily promote teamwork or meaningful relationships, and which may contribute to a positive sense of belonging. This study will add to the existing research by examining mastery-approach, mastery-avoidance,

performance-approach, and performance-avoidance goal orientations and how they may relate to student engagement and student academic outcomes.

Despite the informative findings from previous investigations, there continues to be a gap in current research which investigates the relationships between sense of belonging, ethnic identity, motivational beliefs, school engagement, and academic achievement in adolescent students. Searches on PsycINFO, PsycARTICLES, PsycCRITIQUES, Education Full Text, ERIC, and Academic Premier have failed to yield empirical research combining these areas that may impact academic achievement. Perhaps with a study which investigates sense of belonging, ethnic identity, and motivational beliefs in conjunction with school engagement and academic achievement, relations between these variables might be found which could further help explain the existence of the achievement gap.

Therefore, based on the findings from recent research studies and their subsequent limitations or directions for further study, this study's objective is to investigate the relation of sense of belonging, ethnic identity, and motivational beliefs (academic self-efficacy, value of academic success, achievement goal orientations), to school engagement (effort, persistence, procrastination, attendance) and academic achievement (language arts averages, overall academic averages, standardized reading assessment scores). As there are several variables of interest, this study will utilize the multivariate method of hierarchical multiple linear regressions, not only for predictive purposes, but also to better examine the dynamics of the underlying constructs.

Research Questions and Hypotheses

Specifically, this study hopes to answer the following questions:

1. To what extent are the ethnic identity variables (affirmation, belonging, and commitment and exploration and behaviors) related to the dependent variables (effort, persistence, procrastination, attendance rates, fourth nine-weeks language arts grades, overall language arts averages, overall academic averages, and reading achievement scores) in a middle school sample? It is hypothesized that the ethnic identity variables will be positive predictors of all of the dependent variables, except procrastination, of which the ethnic identity variables will be negative predictors.
2. To what extent is student sense of belonging (as revealed in factor analyses; acceptance, belonging, rejection, and perception of teachers' opinions) related to the dependent variables (effort, persistence, procrastination, attendance rates, fourth nine-weeks language arts grades, overall language arts averages, overall academic averages, and reading achievement scores) in a middle school sample? It is hypothesized that rejection will be positively related to procrastination and negatively related to all other dependent variables. It is also hypothesized that the other sense of belonging variables (acceptance, belonging and perception of teachers' opinions) will be negatively related to procrastination, and positively related to all other dependent variables.
3. To what extent are the motivational belief variables (academic self-efficacy, value of academic success, mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance

goal orientation) related to the dependent variables (effort, persistence, procrastination, attendance rates, fourth nine-weeks language arts grades, overall language arts averages, overall academic averages, and reading achievement scores) in a middle school sample? It is hypothesized that mastery-approach goal orientation will be negatively related to procrastination, and positively related to all other dependent variables. Mastery-avoidance goal orientation is hypothesized to be positively related to procrastination and negatively related to all other dependent variables. Performance-approach goal orientation is hypothesized to be positively related to all dependent variables. It is also hypothesized that performance-avoidance goal orientation is positively related to procrastination and negatively related to all other dependent variables.

4. To what extent are the school engagement variables (effort, persistence, procrastination, and attendance) related to the achievement dependent variables (fourth nine-weeks language arts grades, overall language arts averages, overall academic averages, and reading achievement scores) in a middle school sample? It is hypothesized that effort, persistence, and attendance are positive predictors of the achievement dependent variables, and procrastination a negative predictor.

CHAPTER III

Method

Participants

Participants (*N* = 589) for this study came from a school district in an ethnically diverse community of a Southwestern city of the United States. With approval from the school district's research department and agreements to participate from the campus principals, the seventh and eighth graders were recruited from two middle schools. However, the data from one school was not included in this study due to the low response rate of 0.01% (12 students who obtained parent consent, granted student assent, and completed the survey out of 1058 students). The response rate at the second campus was 47%, for an *N* = 594 out of 1264 students. Five responses were dropped by the researcher due to insufficient data or repeated data (students who accidentally started the survey twice), yielding a final sample size of 589 students, which is deemed an acceptable sample size for correlations, factor analyses, and multiple regressions (Tabachnick & Fidell, 2007).

The sample consisted of 270 females and 319 males ranging in age from 12 to 15 years, with a mean age of 13.43 years (*SD* = .78). The district ethnic coding of the sample indicated a large minority representation: 45.30% African American (*n* = 267), 34.50% Hispanic (*n* = 203), 15.45% Asian or Pacific Islander (*n* = 91), 4.60% White (*n* = 27), and 0.20% American-Indian (*n* = 1). The sample indicated a gender distribution that was about the same distribution of males and females: 54.20% male students (*n* = 319) and 45.80% female students (*n* = 270). The sample was made up of 53.50% seventh graders (*n* = 315) and 46.50% eighth graders (*n* = 274). Sixty-two percent of the students were on

free/reduced lunch (*n* = 366) which was about the same as the overall student body percentage (60.50% economically disadvantaged). Additional campus information indicated that the campus had an overall 17.9% mobility rate, and that 57.70% of the students were at-risk, 12.60% were Limited English Proficient, and 5.40% had disciplinary placements (Texas Education Agency, 2009).

All students recruited for this study were enrolled in a language arts class, as this course was required for all students, although the nature of the classes differed slightly. From school data, it was gleaned that 66.70% of the participants (*n* = 393) were enrolled in a regular language arts class, while 28.20% were enrolled in a pre-advanced placement language arts class (*n* = 166), and 5.10% were enrolled in an English as Second Language (ESL) language arts class (*n* = 30).

Procedure

Students completed a self-report survey during the final days of the spring semester. A script was strictly followed by the building principals and the researcher or trained staff members throughout the duration of the study. See Appendix A for the verbatim scripts. Student participation was solicited at the middle school campuses via a public announcement system advertisement during morning announcements presented by the campus principal, via posters displayed in the main hallways of each campus, and via letters that went home explaining the research study and included parent permission forms.

During the public announcements, students were told of the general nature of the survey (i.e., it is about student achievement goal orientations, ethnic identity, and sense of belonging and how they relate to school engagement and academic achievement). They

were told that the survey serves as information for research purposes, not as a test, and that there were no right or wrong answers. Confidentiality was stressed, with students told that no one at home or at school would see their responses. Per principal discretion, students were rewarded with free dress day passes or popcorn for their participation.

Next, students were given a parent letter and consent form to take home, to have signed by a parent indicating their permission to participate in the study, as well as parent permission for the researcher to obtain course grades, overall grade point averages, attendance records, and federal lunch status from school district records. Students were given three days to return the permission slips, with the building principal reminding students of the deadline via the public announcement system.

On the day of data collection on the first campus, only 12 students assented to participate, from the 14 whom submitted parent permission forms. Per building principal request, the paper-pencil version of the questionnaire was utilized. See Appendix F for a copy of the questionnaire. These students were taken to the cafeteria, where the researcher read the directions, obtained the assent forms, and read through the sample items with the students to explain the Likert scale. There were no questions posed by these students, so the participants were told to begin reading the questionnaire. Upon completion, the students were thanked for their participation and excused to return to class. As they exited the cafeteria, a staff member designated by the campus principal was on hand to give the students a bag of popcorn for their participation.

The following day, at the second campus, those who obtained parental consent forms were taken to a computer lab by the physical education coaches. A second lab down the hall was also set up as an overflow room. Per principal request, students who

obtained parental consent and assented to participate were administered the survey during physical education class. Students who had obtained parent consents but who were not enrolled in a physical education class were brought to the lab by the building principal either before school started or during their lunch period, where the researcher administered the survey. Trained proctors remained in both rooms throughout the day, with the researcher remaining in the larger computer lab and assisting in the overflow lab as necessary.

The researcher (or trained proctor) instructed the participants not to begin until the directions were read. The student assent form was read to the students and assent to participate obtained, with copies of the assent form given to students to retain for their records. Next, the researcher completed three sample questions with the participants at the beginning of the questionnaire to introduce the use of the Likert scale and to explain the use of the on-line version of the survey (via Survey Monkey) on the computer screen. See Appendix F for the paper copy of the survey, which was uploaded to the on-line survey. General questions were answered before students began, with individual questions answered throughout the various periods. Finally, participants were instructed to complete the entire survey on their own and to raise their hand when they were finished. When finished, participants were directed to log off the computer screen and return to the gymnasium. The administration sessions for each period took approximately 35 minutes.

Students who were absent or unavailable for participation on the specific day were given a make-up day in which to participate, where the trained proctor followed the scripts as they gave students the instructions to participate. The on-line survey was then

closed by the researcher, with the data downloaded onto the researcher's password protected USB jump drive, burned onto a CD-ROM disk, and turned into the researcher's advisor for storage.

Instruments

The first five items on the survey were asked as a means of describing the sample. The sample demographics included name, age, gender, grade level, and lunch ID numbers. Imbedded within the survey instrument were three additional open-ended demographic questions regarding their self-reported ethnicity and the ethnicity of their father and their mother (Roberts et al., 1999). The diversity of the sample was confirmed from these open-ended answers, with forty-nine different self-reported ethnicity answers given by the participants. Attendance records, federal lunch status, and individual language arts nine-week course grade, final language arts course grade (average of the year), and overall academic averages (average of scores from the entire year in language arts, mathematics, reading/literature, history/social studies, and science) were obtained through school records.

The main portion of the instrument included 75 items (including the three afore mentioned open-ended ethnicity items; Appendix B) which were adapted from existing subscales -- an adapted form of the Psychological Sense of School Membership (PSSM; Goodenow, 1993b), the Multigroup Ethnic Identity Measure-Revised (MEIM-R; Roberts et al., 1999), an adapted form of the Academic Engagement Scale (AES; Wolters, 2004), four adapted subscales of the Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000), an adapted form of the Value of Academic Success Scale (VASS; Fuligni et al., 2005), and an adapted form of Elliot and McGregor's (2001) Mastery-Avoidance

subscale (Elliot & McGregor, 2001; Lindt, 2008). Each of the subscale indexes were computed by averaging student responses to specific items within a scale. Higher scores on each given scale indicated higher levels of that construct, such that higher scores indicated higher levels of affirmation, belonging, and commitment, higher levels of exploration and behaviors, higher levels of belonging, higher levels of rejection, higher levels of acceptance, higher levels of academic self-efficacy, higher levels of value of academic success, higher likelihood of adopting mastery-approach goal orientation, higher likelihood of adopting mastery-avoidance goal orientation, higher likelihood of adopting performance-approach goal orientation, and higher likelihood of adopting performance-avoidance goal orientation, higher levels of effort, higher levels of persistence, and higher levels of procrastination.

Psychological Sense of School Membership Scale

Goodenow's PSSM (1993b) consisted of 18-items using a 5-point Likert-like format, anchored from 1 (*not at all true of me*) to 5 (*very true of me*). The PSSM measured students' sense of being accepted, valued, included, and encouraged by others in the classroom, and of feeling as an important part of the life and activity of a class or school (Goodenow, 1993b). The overall reliability coefficient of the PSSM with middle school students was reported to be .88 for suburban students, (Goodenow, 1993b). A sample item was, "I feel like a real part of (name of school)."

Although the PSSM has been utilized in several studies as a unidimensional measure of school belonging (Anderman, L., 1999; Booker, 2004; Goodenow, 1993b), Hagborg (1994) reported PSSM with three constructs: belonging, rejection, and acceptance, with reliability coefficients ranging from .71 to .94. The *Belonging Subscale*

included thirteen items and encompassed school identification, active participation in school life, and teacher and student interest and support. A sample item was “I can really be myself at this school.” The *Rejection Subscale* focused on feelings of personal rejection or approval among classmates. Three items measured the rejection subscale. A sample item was “It is hard for people like me to be accepted here.” The *Acceptance Subscale*, which included two items, was defined as students’ acceptance of and pride in the school. A sample item was “I feel proud of belonging to (this school).” The three subscales utilized a 5-point Likert-like scale. Items on the scales were anchored from 1 (*not at all true of me*) to 5 (*very true of me*).

Multigroup Ethnic Identity Measure

Much of the research regarding ethnic identity defines it as a construct with three components: affirmation and belonging, ethnic identity achievement, and ethnic behaviors (Phinney, 1992; Phinney et al., 1997; Zaff et al., 2002). However, a few studies indicated findings which report ethnic identity being constructed of two components, affirmation, belonging, and commitment and reflected exploration of and active behavior/involvement in group identity (Phinney & Ong, 2007; Roberts et al., 1999). Although Phinney and Ong (2007) published a recent study with college students which included a more succinct 6-item scale (MEIM-Revised) with two-factor constructs of commitment and exploration, Roberts et al.’s (1999) 12-item version of Phinney’s (1992) MEIM was used in this study, as their MEIM was also administered to students at the middle school level.

The seven items of the *Affirmation, Belonging, and Commitment Subscale* assessed students’ sense of belonging and commitment to their specific ethnic group.

Roberts et al. (1999) reported Cronbach alphas between .81 and .88 with their middle school population. A sample item was, “I have a strong sense of belonging to my own ethnic group.” Cronbach alphas between .57 and .76 were reported for the five item *Exploration and Behaviors Subscale*, which assessed students’ exploration and participation in ethnic or cultural practices (Roberts et al., 1999). A sample item was, “To learn more about my ethnic background, I have often talked to other people about my ethnic group.” See Appendix B for all items pertaining to each variable. The MEIM originally used a 4-point Likert-like scale, but was adapted into a 5-point Likert-like scale to better fit the range utilized for the other scales in this study. The new 5-point Likert-like scale were anchored from 1 (*strongly disagree*) to 5 (*strongly agree*).

Academic Self-Efficacy

The Academic Self-Efficacy (ASE; Midgley et al., 2000) subscale measured the students’ perceptions of their competence to do their class work, and utilized a 5-point Likert-like scale. There were five items which measured *Student Academic Self-Efficacy*, anchored from 1 (*not at all true of me*) to 5 (*very true of me*). A sample item was, “Even if the work is hard in my language arts class, I can learn it.” Midgley et al. reported a Cronbach Alpha of .78 with a population of students in third grade through ninth grade.

Value of Academic Success

The *Value of Academic Success Scale* (VASS; Fuligni et al., 2005) measured the extent to which students place importance on doing well and succeeding in school. The scale consisted of six items using a 5-point Likert-like format, which ranged from 1 (*not at all true of me*) to 5 (*very true of me*). Fuligni et al. reported a reliability coefficient of

.85 with 589 ninth-graders. A sample item was, “It is important to me that I get good grades.”

Achievement Goal Orientation

Although Elliot and McGregor’s Achievement Goal Questionnaire (AGQ, 2001) is the more recent 2x2 goal orientation model, their work was utilized with a college sample size. This study used Midgley et al.’s PALS (2000), which has traditionally been given to students at the elementary through high school level, and was acceptable for the middle school sample for this study. The revised versions of the three subscales, mastery-approach goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation, were drawn from the PALS (Midgley et al., 2000). These updated scales reflect changes made in the wording of each item, and indicated the more recent conceptualization of goals (Midgley et al., 2000). The three subscales utilized a 5-point Likert-like scale. Items on the student scales were anchored from 1 (*not at all true of me*) to 5 (*very true of me*).

Mastery-approach goal orientation. The *Mastery Goal Orientation-Revised* measures the extent to which a student focuses on developing competence in coursework or a task (Elliot & Church, 1997; Grant & Dweck, 2003; Pintrich & Schunk, 2002). There were five items which measured mastery goal orientation. Midgley et al. (2000) reported a Cronbach α = .85 for school aged participants. A sample item was, “It’s important to me that I thoroughly understand my class work.” These items from Midgley et al. were entitled the Mastery-Approach Goal Orientation Scale in the current study, as these items were more closely aligned with the mastery-approach conceptualized theory of the approach and avoidance debates.

Performance-approach goal orientation. The *Performance-Approach Goal Orientation-Revised*, which consisted of five items, measured the extent to which a student focuses on demonstrating competence, especially in comparison with others (Elliot & Church, 1997; Grant & Dweck, 2003; Pintrich & Schunk, 2002). With school aged participants, Midgley et al. (2000) reported a Cronbach α = .89. A sample item was, "It's important to me that I look smart compared to others in my class."

Performance-avoidance goal orientation. Performance-Avoidance Goal Orientation-Revised measured the extent to which a student seeks to avoid looking incompetent in comparison with others (Elliot & Church, 1997; Grant & Dweck, 2003; Pintrich & Schunk, 2002). For this four item scale, a Cronbach α = .74 was reported by Midgley et al. (2000) for school aged students. A sample item was, "One of my goals in class is to avoid looking like I have trouble doing the work."

Mastery-avoidance goal orientation. Since Midgley et al.'s PALS used a trichotomous model for their goal orientation items and no other study has been found to explore the 2x2 model with middle school samples, a mastery-avoidance subscale recently used with high school students was utilized in this study. Lindt (2008) utilized the three revised goal orientation subscales (mastery, performance-approach, and performance-avoidance) from PALS, and included an additional mastery-avoidance goal orientation subscale by adapting from and adding to items from Elliot and McGregor (2001) and Witkow and Fuligni (2007). The *Mastery-Avoidance Goal Orientation*, which included four items, measured the extent students focus on the task to avoid failure. Lindt (2008) reported a Cronbach α = .78 for the mastery-avoidance goal orientation. A sample item was, "I worry that I may not learn all that I possibly could in this class." Witkow and

Fuligni (2007) reported a Cronbach α = .76 for their three item mastery-avoidance goal orientation. A Cronbach α = .89 for their three item mastery-avoidance goal orientation was reported by Elliot and McGregor (2001) with their college sample.

Academic Engagement

The Academic Engagement Scale (AES; Wolters, 2004), which originally utilized a 7-point Likert-like scale, was adapted to fit the utilization of a 5-point Likert-like scale for this study. Items on the student scales were anchored from 1 (*not at all true of me*) to 5 (*very true of me*). The AES has traditionally been administered to students at the middle school through high school level, which is appropriate for use in this study.

AES was originally utilized with four components, choice, effort, persistence, and procrastination, with reported reliability coefficients ranging from .72 to .84. However, since middle school students rarely have a choice about course work, the choice component was dropped from the academic engagement scales for this current study. Therefore, only three subscales were utilized from the AES: effort, persistence, and procrastination. The courses in the participating school district were entitled “language arts”, therefore, the wording in the AES subscales was changed from “reading” to “language arts”.

Effort. The *Effort Subscale,* which included four items, reflected students’ belief that they worked hard to complete tasks for their language arts class. A sample item was, “I put more effort into my language arts class than I do in my other classes.”

Persistence. The four items of the *Persistence Subscale* measured students’ beliefs that they completed work for their language arts class even when faced with

distractions, boredom, or difficulty. A sample item was, “Even if my language arts work is dull or boring, I keep at it until I am finished.”

Procrastination. The *Procrastination Subscale,* with five items, reflected students’ perception of their own behavior and tendency to put off getting started on the work required in their language arts class. A sample item was, “I postpone doing work for my language arts class until the last minute.” See Appendix A for a complete description of individual items associated with each scale used in this study.

Academic Achievement Outcomes

In order to determine academic achievement, final numerical average grades for the language arts classes from each participant were obtained from the building principal one week after the surveys were collected. The final numerical grades reflected the fourth nine-weeks grades, overall average grades from the four nine-week periods, and included final exam scores, test scores, classroom assignment grades, homework completion grades, and student participation grades. For the language arts average grade, the minimum grade was 60 and the maximum grade was 100. Since overall student Grade Point Average (GPA) records were not available at the middle school level, student overall academic averages were calculated from the numerical average grades across the main subject areas of language arts, literature/reading, math, history/social studies, and science, as provided by the building principal. The grades in these five subject areas were added together and divided by five to obtain an overall average grade, utilized in this study as the student overall academic average. For the overall academic average, the minimum grade was 64 and the maximum grade was 99. Attendance rates were calculated by taking the number of days a student was enrolled at that campus and

divided by the number of days present; the minimum attendance rate was 61 percent and the maximum was 100 percent.

Student reading achievement scores were obtained from the end of the year standardized academic achievement reading TAKS (Texas Assessment of Knowledge and Skills) assessments. As state standardized tests, both the seventh and eighth grade tests included stories, articles, and reports, with the knowledge and skills tested grouped into four objectives: basic understanding, applying knowledge of literary elements, using strategies to analyze, and applying critical thinking skills. Both tests consisted of forty-eight test items, had similar minimum standard scale score of 2100, commended performance scale score of 2400, and number of field test items (10). However, the two tests were in fact different tests with different reading levels and stories. Therefore, the scores were transformed into z-scores so that the mean became zero and the standard deviation became 1.

CHAPTER IV

Results

Introduction

In this chapter, analyses using the Statistical Package for the Social Sciences (SPSS 15.0) are presented in three sections. First, a description of the factor analyses involving the PSSM scale and the MEIM scale are presented in Tables 4.1 and 4.2. Second, descriptive statistics, scale reliabilities, and bivariate correlations are presented in Tables 4.3, 4.4, and 4.5 respectively. Finally, the results of the three-step hierarchical multiple linear regressions of the four school engagement outcome variables (effort, persistence, procrastination, and attendance) are presented in Tables 4.6, 4.7, 4.8, and 4.9, followed by the results of the four-step hierarchical multiple linear regressions of the three academic outcomes (overall language arts grade, overall academic average, and reading achievement score), presented in Tables 4.10, 4.11, and 4.12.

Factor Analyses

A series of factor analyses were run on the PSSM and MEIM items. With a 75-item questionnaire measuring 14 different constructs, there is a chance that individual variance of the constructs will overlap. Overlapping variance becomes problematic because predictor variables that share in their contribution to the criterion variable(s) diminish the amount of variance that can be explained overall. Conducting factor analyses provides the researcher with an empirical rationale for reducing multiple items to a few factors. In essence, moderately to highly correlated items are combined to form factors which represent separate constructs (Tabachnick & Fidell, 2007).

There were 14 predictor variables included in the current study. The academic self-efficacy and value of academic success variables have been reported to be valid and reliable in previous research, with Cronbach alphas ranging from .78 to .85 respectively (Fuligni et al., 2005; Midgley et al., 2000). Similarly, the three subscales of school engagement, effort, persistence, and procrastination, were reported to be valid and reliable in previous research, with Cronbach alphas ranging from .72 to .84 respectively (Wolters, 2004).

The motivation variables of achievement goal orientations, as measured by PALS, have also been reported to be valid and reliable in previous research (Midgley et al., 2000). In a previous study similar to the current investigation, Sha (2007) used revised items from the PALS motivation scale in reference to college students' beliefs regarding their motivation and attitudes in chemistry. She reported acceptable reliability levels on these scales (.69 - .74). In a comparative study, Ross, Shannon, Salisbury-Glennon, and Guarino (2002) found PALS to be statistically reliable and valid at different ages and developmental levels, using samples from fourth-grade to college levels. Their reported Cronbach alphas were also acceptable (.79-.81; Ross et al., 2002).

However, the sense of belonging and ethnic identity variables have not always factored into distinct scales in other studies (Goodenow, 1993b; Hagborg, 1994; Phinney, 1992; Phinney et al., 1997; Phinney & Ong, 2007; Roberts et al., 1999). With the reports of factorial differences, two factor analyses were run on the items which make up each respective construct to determine scales and reliability for this particular study.

The researcher ran a Principle Components Analysis (PCA) with a varimax rotation on the eighteen PSSM items to ascertain whether they separated into the three

constructs as found by Hagborg (1994). Although the items may be correlated and an oblique rotation deemed more appropriate, the factor correlations indicated that a varimax rotation would be more suitable (Meyers, Gamst, & Guarino, 2006). Extracting only factors with eigenvalues of 1.0 or greater (Meyers et al., 2006), a varimax solution was obtained, and items with factor loadings that exceeded .48 are shown in Table 4.1. Four orthogonal factors were derived, accounting for 56.91% of the variance in the PSSM. The eigenvalue of *acceptance*, the first factor with 7 items (55, 48, 54, 56, 44, 60, and 53), was 5.51, explaining 30.59% of the total variance. The eigenvalue of the second factor, *rejection*, with four items (46, 52, 57, and 47) was 2.43, explaining 13.52% of the total variance. The third factor, *belonging*, which had 3 items (49, 45, and 51), had an eigenvalue of 1.18, explaining 6.55% of the total variance. The eigenvalue of *perceived teacher's opinions*, the fourth factor with four items (58, 50, 59, and 43), was 1.13, explaining 6.25% of the total variance; see Table 4.1.

A second principal components analysis with an oblimin rotation was conducted on the 12 ethnic identity items of the MEIM. Due to the moderately high factor correlations, an oblique rotation was more suitable than a varimax rotation (Meyers et al., 2006). Two oblique factors were derived, accounting for 56.27% of the variance in the MEIM. Extracting only factors with eigenvalues of 1.0 or greater (Meyers et al., 2006) an oblique solution was obtained and items with factor loadings that exceeded .50 are shown in Table 4.2.

The PCA resulted in a two component solution with seven items (75, 68, 66, 72, 69, 70, and 74) loading onto the first factor. Review of these items suggested that the items assessed students' sense of affirmation, belonging, and commitment to their

Table 4.1
Varimax Solution Factor Loadings of PSSM Items

Item	Factor 1	Factor 2	Factor 3	Factor 4
55. Other students here like me the way I am.	.81			
48. I am treated with as much respect as other students.	.68			
54. People at this school are friendly to me.	.68			
56. I can really be myself at this school.	.64			
44. People here know I can do good work.	.55			
60. Other students in this school take my opinions seriously.	.54			
53. People here notice when I'm good at something.	.48			
46. Sometimes I feel as if I don't belong here.		.82		
52. I feel very different from most other students here.		.78		
57. It is hard for people like me to be accepted here.		.70		
47. I wish I were in a different school.		.69		
49. I feel like a real part of (name of school).			.73	
45. I am included in lots of activities at (name of school).			.69	
51. I feel proud of belonging to (name of school).			.62	
58. Teachers here are not interested in people like me.				.72
50. There's at least one teacher or other adult in this school I can talk to if I have a problem.				.60
59. The teachers here respect me.				.53
43. Most teachers at (name of school) are interested in me.				.52
Eigenvalue (% variance)	5.51	2.43	1.18	1.13
	(30.59)	(13.52)	(6.55)	(6.25)
Cumulative %	30.59	44.11	50.67	56.91

specific ethnic group, and explained 45.83% of the total variance, with an eigenvalue of 5.50. The second factor, with five items (71, 65, 64, 67, and 73) loaded, seemed to assess students' exploration and behavior/participation in ethnic or cultural practices, explaining an additional 10.44% of the total variance, with an eigenvalue of 1.25.

Table 4.2
Oblique Solution Factor Loadings of MEIM Items

Item	Factor 1	Factor 2
75. I feel good about my cultural or ethnic background.	.87	
68. I am happy that I am a member of the group I belong to.	.82	
66. I have a clear sense of my ethnic background and what it means to me.	.82	
72. I have a lot of pride in my ethnic group and its accomplishments.	.80	
69. I have a strong sense of belonging to my own ethnic group.	.72	
70. I understand pretty well what my ethnic group membership means to me.	.68	
74. I feel a strong attachment towards my own ethnic group.	.67	
71. To learn more about my ethnic background, I have often talked to other people about my ethnic group.		.72
65. I am active in organizations or social groups that include mostly members of my own ethnic group.		.70
64. I have spent time trying to find out more about my ethnic group, such as its history, tradition, and customs.		.70
67. I think a lot about how my life will be affected by my ethnic group membership.		.69
73. I participate in cultural practices of my own group, such as special food, music, or customs.		.50
Eigenvalue (% variance)	5.50	1.25
	(45.83)	(10.44)
Cumulative %	45.83	56.27

Computation of Cronbach Alphas

Cronbach alphas on each scale were computed to determine that the reliability of each variable was adequate. Reliability estimates above .70 are usually preferred (Netemeyer, Bearden, & Sharma, 2003). A Cronbach alpha range of .60 to .65 is deemed undesirable while ranges between .65 and .70 are seen as minimally acceptable (DeVellis, 2003). The number of items affects the reliability, such that more items increase reliability (Nunnally & Bernstein, 1994). Interest and attitude inventories have also been found to have lower reliability than achievement tests (Wiersma & Jurs, 2005).Therefore, the estimates of .60 and higher were considered acceptable for this study, as the scales with Cronbach alphas < .70. had four or fewer items.

Affirmation, belonging, and commitment had seven items with a Cronbach α = .90, matching the alphas reported by Roberts et al. (1999). Exploration and behaviors consisted of five items and produced a Cronbach α = .71. Although this alpha is less than the alphas reported by Roberts et al. (1999), it is still within an acceptable range.

Acceptance consisted of seven items with a Cronbach α = .82. Rejection had four items with a Cronbach α = .77. Belonging had three items with a Cronbach α = .65. Perceived teachers' opinions with four items had a Cronbach α = .63. However, dropping item 58, "Teachers here are not interested in people like me," increased the Cronbach α = .65. Subsequently, all four sense of belonging subscales reached an acceptable level of reliability for this investigation. Hagborg (1994) found three factors within the original Goodenow (1993b) scale, but did not report the individual alphas, thus the reliability levels were incomparable.

Table 4.3
Cronbach Alphas for Each Variable

Variable	Number of Items	Cronbach α
Affirmation, Belonging, and Commitment	7	.90
Exploration and Behaviors	5	.71
Acceptance	7	.82
Rejection	4	.77
Belonging	3	.65
Perception of Teacher's Opinion	3	.65
Academic Self-Efficacy	5	.77
Value of Academic Success	6	.80
Mastery -Approach Goal Orientation	5	.86
Mastery -Avoidance Goal Orientation	4	.74
Performance -Approach Goal Orientation	5	.85
Performance -Avoidance Goal Orientation	4	.70
Effort	3	.61
Persistence	4	.64
Procrastination	5	.74

Academic self-efficacy consisted of five items with a Cronbach α = .77, which matches the reported alpha of the PALS scale (Midgley et al., 2000). With six items, value of academic success had a Cronbach α = .80, which closely matches the alpha of the original Fuligni et al. (2005) scale.

Mastery-approach goal orientation consisted of five items with a Cronbach α = .86. Mastery-avoidance goal orientation had four items which produced a Cronbach α = .74. Performance-approach goal orientation had five items with a Cronbach α = .85. Performance-avoidance goal orientation consisted of four items with a Cronbach α = .70. These alphas closely matched the alphas reported by Midgley et al. (2000).

Items which were negatively worded in the school engagement scales were reverse-coded prior to analysis. The effort subscale had four items with a Cronbach α = .55. Because this alpha did not reach an acceptable level for this investigation, one item (item 2, “I put more effort into my language arts class than I do in my other classes.”) was dropped to yield a new Cronbach α = .61. Persistence consisted of four items, producing a Cronbach α = .64. Procrastination had five items with a Cronbach α = .74. Although these alphas are lower than the alphas reported in the original school engagement scales (Wolters, 2004), they still reached an acceptable level for this study (DeVellis, 2003); see Table 4.3.

Descriptive Statistics

To obtain descriptive statistics on the sample, analyses were conducted to calculate means, standard deviation, skewness, and kurtosis, represented in Table 4.4. The mean scores were above the midpoint for most of the scales. However, both the procrastination scale (M = 2.58, SD = 0.94) and the mastery-avoidance goal orientation scale (M = 2.93, SD = 1.00) fell just slightly above the midpoint. The mean scores for the variables in this study suggest that the participants were only moderately engaged in procrastinating behaviors and only moderately adopted mastery-avoidance behaviors. Rejection was the only scale to fall below the midpoint (M = 2.31, SD = 1.08), albeit slightly, which suggests that the participants were not very likely to feel rejected at their campus.

The variables were screened for normality by looking at the skewness and kurtosis (Tabachnick & Fidell, 2007). Most of the variables, except the rejection scale, the procrastination scale, overall academic averages, and reading achievement scores,

Table 4.4
Means, Standard Deviations, Skewness, and Kurtosis on the Predictor and Criterion Variables

Variables	*M (SD)*	*Skewness*	*Kurtosis*
Affirmation, Belonging, and Commitment	4.18 (.85)	-1.20	1.05
Exploration and Behaviors	3.44 (.90)	-.30	-.32
Acceptance	3.76 (.81)	-.85	.92
Rejection	2.31 (1.08)	.58	-.46
Belonging	3.42 (1.03)	-.38	-.49
Perceptions of Teachers' Opinions	3.63 (1.01)	-.70	-.03
Academic Self-Efficacy	4.10 (.75)	-1.00	.94
Value of Academic Success	4.31 (.72)	-1.71	3.68
Mastery -Approach Goal Orientation	4.08 (.85)	-.96	.61
Mastery -Avoidance Goal Orientation	2.93 (1.00)	-.09	-.68
Performance -Approach Goal Orientation	3.15 (1.06)	-.29	-.64
Performance -Avoidance Goal Orientation	3.05 (1.04)	-.12	-.74
Effort	3.88 (.85)	-.44	-.36
Persistence	3.45 (.89)	-.12	-.66
Procrastination	2.58 (.94)	.24	-.53
Language Arts 4th Nine-Weeks Grade	83.71 (10.16)	-.48	-.41
Language Arts Overall Average Grade	84.06 (7.99)	-.21	-.61
Overall Academic Average Grade	82.62 (7.06)	.02	-.65
Reading Achievement Score	0.00 (1.00)	.15	.30
Attendance Rate	96.88 (3.71)	-3.32	19.75
Reflected LOG_{10} Attendance	.49 (.32)	.26	-.38

Note. N = 589. Affirmation, belonging, and commitment, exploration and behaviors, acceptance, rejection, belonging, perceptions of teachers' opinions, mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, performance-avoidance goal orientation, effort, persistence, and procrastination scales ranged from 1-5. The language arts overall average grade ranged from 60-100. Overall academic average grade ranged from 64-99. The reading achievement score ranged from 1479-2734 with a transformed z-score ranging from -4.63-2.07. The attendance rate ranged from 61-100.

were negatively skewed. Most of the negatively skewed scales were only moderately so, within one standard deviation, indicating there was not a great deal of asymmetry within each distribution. There were two exceptions. Affirmation, belonging, and commitment was an exception; its extreme negative skewness showed that student beliefs regarding their ethnic identity were very high. Value of academic success was also an exception; its extreme skewness showed that students' valuation of academic success were very high.

All of the scales, with the exception of affirmation, belonging, and commitment, value of academic success, and attendance rate, had a kurtosis less than 1, suggesting they were platykurtic (i.e., their shapes were relatively flat). The scales measuring affirmation, belonging, and commitment, value of academic success, and attendance rate had a more peaked distribution of scores than the other scales, indicating less variability.

As the attendance rates were extremely negatively skewed and had extremely positive kurtosis, the assumption of normality was violated for attendance rates. As true normality is rare in education and psychology (Micceri, 1989), it is sometimes necessary to transform data. Because the data for attendance were negatively skewed, the first step was to "reflect" the data and then apply the log transformation (Maxwell & Delaney, 2004). This reflection and transformation normalized the data, and enabled the distribution to conform to the assumptions. Although it is not universally recommended to use data transformations as a remedy for failures of normality, linearity, and homoscedasticity (Tabachnick & Fidell, 2007), the reflection and transformation was successful for this study; therefore, the transformed data (reflected $\log_{10}$ attendance) was utilized in all analyses.

Bivariate Correlations

A correlation matrix using Pearson's product moment correlation was constructed and examined to see how each measured variable correlated with all the other variables in the study. This was done to check for multicollinearity among variables. Examination of the correlations between ethnic identity, sense of belonging, school engagement, goal orientations, value of academic success, academic self-efficacy, attendance, grades, and assessments showed some expected and unexpected relations, and are presented in Table 4.5. Two of the indicators of academic achievement, fourth nine-weeks language arts grades and overall language arts grades, were highly correlated (r = .84). To be parsimonious, only one measure, the overall language arts grade, was utilized in subsequent data analyses.

Hierarchical Multiple Linear Regressions

In order to address the main research questions, two sets of hierarchical multiple linear regressions were run to investigate the relations of affirmation, belonging, and commitment, exploration and behaviors, acceptance, rejection, belonging, academic self-efficacy, value of school success, mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation to school engagement variables (effort, persistence, procrastination, and attendance rate) and these variables to the academic outcomes of overall language arts grade, overall academic average, and reading achievement score.

The first set of hierarchical multiple linear regressions included four regressions, one for each of the school engagement criterion variables (effort, persistence, procrastination, and attendance). For each of these hierarchical multiple linear

Table 4.5

Descriptive Statistics and Pearson's Product-Moment Correlations of Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Gender	-	-.12**	-0.02	-.14**	-.11**	-.09*	-.02	-.03	-.09*	-.12**	-.15**	-.14**	-.12**	-.10*	-.08	-.09*	.02	-.00	.08*	-.18**	-.19**	-.17**	-.14**
2. Grade		-	-.02	-.00	-.00	.04	.03	-.03	.03	.01	-.05	-.08	-.07	-.07	-.12**	-.04	.02	.02	-.04	.15**	.16**	.04	.32**
3. SES			-	-.05	-.01	-.07	-.05	-.06	-.05	-.13**	-.07	-.04	-.01	-.06	-.01	-.06	-.04	.00	-.07	-.08	-.07	-.10*	-.16**
4. Affirmation & Belonging				-	.60**	.44**	-.19**	.28**	.36**	.38**	.37**	.33**	.13**	.24**	.16**	.21**	.15**	-.06	.11*	.14**	.16**	.23**	.18**
5. Exploration & Behaviors					-	.34**	.03	.27**	.30**	.27**	.23**	.30**	.23**	.32**	.25**	.14**	.03	.09	.03	.05	.06	.06	-.01
6. Acceptance						-	-.22**	.57**	.65**	.43**	.40**	.39**	.11**	.28**	.14**	.28**	.19**	-.05	.06	.13**	.15**	.20**	.12**
7. Rejection							-	-.18**	-.10*	-.04	-.03	-.03	.26**	.15**	.26**	-.22**	-.33**	.35**	-.03	-.08*	-.11**	-.10*	-.11*
8. Belonging								-	.51**	.40**	.37**	.38**	.08	.26**	.15**	.25**	.20**	-.07	.18**	.16**	.18**	.20**	.10*
9. Perception of Teacher's Opinions									-	.44**	.46**	.44**	.17**	.27**	.16**	.33**	.17**	-.04	.09*	.18**	.16**	.18**	.09*
10. Academic Self-Efficacy										-	.62**	.58**	.11**	.34**	.20**	.46**	.31**	-.14**	.11*	.27**	.29**	.33**	.21**
11. Value of Academic Success											-	.65**	.23**	.47**	.28**	.46**	.27**	-.13**	.17**	.26**	.26**	.35**	.15**
12. Mastery-Approach												-	.23**	.44**	.27**	.51**	.30**	-.13**	.08	.15**	.15**	.19**	-.03
13. Mastery-Avoidance													-	.41**	.47**	-.07	-.29**	.40**	-.08	-.11*	-.11*	-.06	-.09*
14. Performance-Approach														-	.64**	.22**	.02	.22**	-.00	.06	.04	.03	-.12**
15. Performance-Avoidance															-	.01	-.18**	.32**	-.02	-.09*	-.11*	-.07	-.17**
16. Effort																-	.58**	-.46**	.10*	.29**	.31**	.28**	.08
17. Persistence																	-	-.65**	.15**	.34**	.34**	.32**	.16**
18. Procrastination																		-	-.13**	-.27**	-.29**	-.28**	-.17**
19. Attendance																			-	.25**	.32**	.40**	.24**
20. LA Grade 4th 9-Weeks																				-	.84**	.70**	.36**
21. Overall LA Averages																					-	.84**	.46**
22. Overall Academic Averages																						-	.55**
23. Reading Achievement Score																							-

Note. *$p < .05$. **$p < .01$. $N = 589$.

regressions, the main analysis consisted of three steps to investigate how the predictors related to the criterion variables. The second set of hierarchical multiple linear regressions included three regressions, one for each of the achievement criterion variables (overall language arts average, overall academic average, and reading achievement score). For each of these hierarchical multiple linear regressions, the main analysis consisted of four steps to investigate how the predictors related to the criterion variables.

The significance and value of unstandardized regression coefficients (B), standard error of (B), standardized β, R^2, and $R^2\Delta$ were examined for each variable at each step. The assumptions of normality, linearity, and homoscedasticity between overall language arts average, effort, persistence, procrastination, and attendance, and the errors of prediction were met as evidenced by the residual scatter plots. Although there existed residuals in four of the seven hierarchical multiple linear regressions, where cases were extreme (past 3.3 or -3.3; Tabachnick & Fidell, 2007), they did not cause any undue influences on the results for the individual models as a whole, as none of the Cook's Distance values were larger than 1.

Hierarchical Multiple Linear Regressions with the Criterion Variable of Effort

In order to determine how school engagement related to the predictor variables in this study, a set of four separate hierarchical multiple linear regressions were computed (one for effort, persistence, procrastination, and attendance rate). For each of these hierarchical multiple linear regressions, the main analysis consisted of three steps to investigate how the predictors related to the criterion variables. In the first step, gender, minority status, grade level, and socioeconomic status were included as control variables to see how they related to school engagement. All of these personal characteristic

variables were entered as dummy variables, gender (e.g., female = 0, male = 1), grade (e.g., seventh grade = 0, eighth grade = 1), socioeconomic status (e.g., not free and reduced lunch = 0, free and reduced lunch = 1), Hispanic (e.g., not Hispanic = 0, Hispanic = 1), African American (e.g., not African American = 0, African American = 1), and Asian American/Pacific Islander (e.g., not Asian = 0, Asian = 1). The reference group encompassed the students who were identified as “White”. These personal characteristics were included as control variables because previous research has found differences between gender, minority status, grade level, and socioeconomic status with regard to student effort, persistence, procrastination, and attendance.

In the second step, the two components of ethnic identity and the four components of sense of belonging were included as a block to ascertain how they related to school engagement. These were added as a block as they were perceived to be influential to how motivated students become. Next, the motivational variables, the academic self-efficacy, valuation of school success, and four achievement goal orientation variables (mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation) were entered as a block to examine their relation to school engagement. These variables were entered to see if they added anything above and beyond the sense of belonging, ethnic identity, and motivational belief variables. At each step, examination of the tolerance levels indicated that multicollinearity was not an issue. The standardized coefficients were used to conduct comparisons across variables.

The first hierarchical multiple linear regression addressed student effort as the criterion variable. The first model in this hierarchical multiple linear regression was not

significant, F (6, 513) = 2.31, p = .03, R^2 = .03. This indicated that none of the personal characteristic variables contributed significantly to the prediction of student effort. The second model in this hierarchical multiple linear regression was found to be significant, F (12, 507) = 8.44, p < .001, $R^2\Delta$ = .14. Two of the twelve predictor variables contributed significantly to the prediction of student effort: rejection (β = -.17, p = .00) and perceived teachers' opinions (β = .25, p = .00); see Table 4.6.

The motivational belief variables were added in the third model. This model was also significant, F (18, 501) = 18.26, p < .001, $R^2\Delta$ = .23. Eight of the eighteen variables contributed significantly to the prediction of student effort: rejection (β = -.16, p = .00), perception of teachers' opinions (β = .11, p = .02), academic self-efficacy (β = .19, p = .00), value of school success (β = .15, p = .01), mastery-approach goal orientation (β = .31, p = .00), mastery-avoidance goal orientation (β = -.16, p = .00), performance-approach goal orientation (β = .12, p = .02), and performance-avoidance goal orientation (β = -.11, p = .03).

Hierarchical Multiple Linear Regression with the Criterion Variable of Persistence

The second hierarchical multiple linear regression addressed student persistence as the criterion variable. The first model in this hierarchical multiple linear regression was not found to be statistically significant, F (6, 513) = 1.60, p = .14, R^2 = .02. This means that the personal characteristic variables failed to contribute significantly to the prediction of student persistence (p < .05). The ethnic identity and sense of belonging scales were added, and this second model was found to be significant, F (12, 507) = 7.44, p < .001, $R^2\Delta$ = .13. Rejection (β = -.28, p = .00) was the only predictor variable to significantly contribute to the prediction of student persistence.

Table 4.6
Results of Hierarchical Multiple Linear Regression Predicting Student Effort (N = 589)

Predictor Variable	*B*	*SE B*	β
Step 1			
Gender	-.15	.08	-.09
Hispanic	-.24	.19	-.14
African American	-.14	.18	-.08
Asian American/Pacific Islander	.03	.20	.01
Grade Level	-.10	.08	-.06
Socioeconomic Status	-.08	.08	-.05
Step 2			
Gender	-.10	.07	-.06
Hispanic	-.17	.17	-.10
African American	-.14	.17	-.08
Asian American/Pacific Islander	.05	.19	.02
Grade Level	-.10	.07	-.06
Socioeconomic Status	-.07	.07	-.04
Affirmation, Belonging, and Commitment	.04	.06	.04
Exploration and Behaviors	.02	.05	.02
Acceptance	.02	.06	.02
Rejection	-.13	.03	-.17***
Belonging	.04	.04	.05
Perception of Teachers' Opinions	.21	.05	.25***
Step 3			
Gender	-.05	.06	-.03
Hispanic	-.06	.15	-.04
African American	-.16	.15	-.10
Asian American/Pacific Islander	.05	.16	.02
Grade Level	-.06	.06	-.03
Socioeconomic Status	-.03	.06	-.02
Affirmation, Belonging, and Commitment	-.08	.05	-.08

Exploration and Behaviors	.03	.04	.03
Acceptance	-.05	.06	-.04
Rejection	-.13	.03	-.16***
Belonging	-.05	.04	-.06
Perception of Teachers' Opinions	.10	.04	.11*
Academic Self-Efficacy	.22	.06	.19***
Value of School Success	.18	.06	.15**
Mastery-Approach Goal Orientation	.32	.05	.31***
Mastery-Avoidance Goal Orientation	-.14	.04	-.16***
Performance-Approach Goal Orientation	.09	.04	.12*
Performance-Avoidance Goal Orientation	-.09	.04	-.11*

Note. R^2 *= .03 for Step 1;* ΔR^2 *= .14 for Step 2;* R^2 *= .17 for Step 2;* ΔR^2 *= .23 for Step 3;* R^2 *= .40 for Step 3.*

* $p < .05$. ** $p < .01$. *** $p < .001$.

Gender coded: females = 0, males = 1; Hispanic coded: not Hispanic = 0, Hispanic = 1; African American coded: not African American = 0, African American = 1; Asian American/Pacific Islander coded: not Asian = 0, Asian = 1; Grade Level coded: seventh grade = 0, eighth grade =1; Socioeconomic Status coded: not free/reduced lunch = 0, free/reduced lunch = 1.

The third model, with the addition of the motivational beliefs variables, was also found to be significant, F (18,501) = 13.41, $p < .001$, $R^2\Delta = .18$. Six of the eighteen variables contributed significantly to the prediction of student persistence: rejection (β = -.21, p = .00), academic self-efficacy (β = .14, p = .01), value of school success (β = .13, p= .03), mastery-approach goal orientation (β = .21, p = .00), mastery-avoidance goal orientation (β = -.28, p = .00), and performance-avoidance goal orientation (β = -.16, p = .00); see Table 4.7.

Table 4.7
Results of Hierarchical Multiple Linear Regression Predicting Student Persistence (N = 589)

Predictor Variable	*B*	*SE B*	β
Step 1			
Gender	.06	.08	.03
Hispanic	-.33	.19	-.18
African American	-.16	.19	-.09
Asian American/Pacific Islander	-.02	.21	-.01
Grade Level	.02	.08	.01
Socioeconomic Status	-.03	.08	-.02
Step 2			
Gender	.07	.08	.04
Hispanic	-.32	.18	-.17
African American	-.16	.18	-.09
Asian American/Pacific Islander	-.08	.19	-.03
Grade Level	.04	.07	.02
Socioeconomic Status	-.04	.08	-.02
Affirmation, Belonging, and Commitment	.07	.06	.06
Exploration and Behaviors	-.06	.05	-.06
Acceptance	.03	.07	.03
Rejection	-.23	.04	-.28***
Belonging	.08	.05	.09
Perception of Teachers' Opinions	.05	.05	.06
Step 3			
Gender	.07	.07	.04
Hispanic	-.26	.17	-.14
African American	-.22	.16	-.12
Asian American/Pacific Islander	-.14	.18	-.06
Grade Level	.03	.07	.02
Socioeconomic Status	-.00	.07	-.00

Affirmation, Belonging, and Commitment	-.01	.05	-.01
Exploration and Behaviors	-.01	.05	-.01
Acceptance	-.01	.06	-.01
Rejection	-.18	.03	-.21***
Belonging	.02	.04	.02
Perception of Teachers' Opinions	-.02	.05	-.02
Academic Self-Efficacy	.17	.06	.14**
Value of School Success	.16	.07	.13*
Mastery-Approach Goal Orientation	.22	.06	.21***
Mastery-Avoidance Goal Orientation	-.25	.04	-.28***
Performance-Approach Goal Orientation	.07	.05	.08
Performance-Avoidance Goal Orientation	-.13	.04	-.16**

Note. R^2 *= .02 for Step 1;* ΔR^2 *= .13 for Step 2;* R^2 *= .15 for Step 2;* ΔR^2 *= .18 for Step 3;* R^2 *= .33 for Step 3.*

* $p < .05$. ** $p < .01$. *** $p < .001$.

Gender coded: females = 0, males = 1; Hispanic coded: not Hispanic = 0, Hispanic = 1; African American coded: not African American = 0, African American = 1; Asian American/Pacific Islander coded: not Asian = 0, Asian = 1; Grade Level coded: seventh grade = 0, eighth grade =1; Socioeconomic Status coded: not free/reduced = 0, free/reduced lunch = 1.

Hierarchical Multiple Linear Regression with the Criterion Variable of Procrastination

The third hierarchical multiple linear regression addressed student procrastination as the criterion variable. The first model in this hierarchical multiple linear regression was not found to be significant, F (6, 513) = .89, p = .50, R^2 = .01. This means that the personal characteristic variables failed to contribute significantly to the prediction of student procrastination ($p < .05$). Ethnic identity and sense of belonging scales were added, and the second model in this regression was found to be significant, F (12, 507) =

6.89, $p < .001$, $R^2\Delta = .13$. Exploration and behaviors ($\beta = 12$, $p = .03$) and rejection ($\beta = .34$, $p = .00$) were the only two predictor variables to significantly contribute to the prediction of student procrastination.

The third model in this regression was also found to be significant, F (18, 501) = 13.47, $p < .001$, $R^2\Delta = .19$ when the motivational belief variables were added. Six of the eighteen predictor variables contributed significantly to the prediction of student procrastination: rejection ($\beta = .22$, $p = .00$), value of school success ($\beta = -.18$, $p = .00$), mastery-approach goal orientation ($\beta = -.17$, $p = .00$), mastery-avoidance goal orientation ($\beta = .31$, $p = .00$), performance-approach goal orientation ($\beta = .13$, $p = .01$), and performance-avoidance goal orientation ($\beta = .13$, $p = .01$). When the motivational belief variables were added to the model, exploration and belonging was no longer significant; see Table 4.8.

Hierarchical Multiple Linear Regression with the Criterion Variable of Attendance Rate

The final hierarchical multiple linear regression addressed student attendance rate as the criterion variable. The first model in this hierarchical multiple linear regression was statistically significant, F (6, 513) = 3.57, $p = .00$, $R^2 = .04$. This means that gender ($\beta = .09$, $p = .04$) was the only personal characteristic predictor variable to significantly contribute to the prediction of student attendance. Ethnic identity and sense of belonging scales were added, and the second model in this regression was also found to be significant, F (12, 507) = 3.09, $p < .001$, $R^2\Delta = .04$. Four of the twelve predictor variables contributed significantly to the prediction of student attendance: gender ($\beta = .10$, $p = .02$), Asian American/Pacific Islander status ($\beta = .16$, $p = .05$), affirmation, belonging, and commitment ($\beta = .13$, $p = .03$), and belonging ($\beta = .21$, $p = .00$).

Table 4.8
Results of Hierarchical Multiple Linear Regression Predicting Student Procrastination (N = 589)

Predictor Variable	*B*	*SE B*	β
Step 1			
Gender	-.02	.08	-.01
Hispanic	.11	.21	.06
African American	-.00	.20	-.00
Asian American/Pacific Islander	-.17	.22	-.07
Grade Level	.05	.08	.03
Socioeconomic Status	-.02	.09	-.01
Step 2			
Gender	.00	.08	.00
Hispanic	.13	.19	.07
African American	-.01	.19	-.01
Asian American/Pacific Islander	-.07	.21	-.03
Grade Level	.03	.08	.02
Socioeconomic Status	.01	.08	.01
Affirmation, Belonging, and Commitment	-.07	.06	-.06
Exploration and Behaviors	.12	.06	.12*
Acceptance	.05	.07	.04
Rejection	.29	.04	.34***
Belonging	-.02	.05	-.03
Perception of Teachers' Opinions	-.03	.05	-.03
Step 3			
Gender	.03	.07	.02
Hispanic	.12	.17	.06
African American	.07	.17	.04
Asian American/Pacific Islander	.05	.18	.02
Grade Level	.08	.07	.04
Socioeconomic Status	-.01	.07	-.00
Affirmation, Belonging, and Commitment	-.00	.06	-.00

Exploration and Behaviors	.03	.05	.02
Acceptance	.05	.06	.05
Rejection	.19	.04	.22***
Belonging	.00	.04	.00
Perception of Teachers' Opinions	.02	.05	.02
Academic Self-Efficacy	-.07	.07	-.06
Value of School Success	-.23	.07	-.18**
Mastery-Approach Goal Orientation	-.19	.06	-.17***
Mastery-Avoidance Goal Orientation	.29	.04	.31***
Performance-Approach Goal Orientation	.12	.05	.13*
Performance-Avoidance Goal Orientation	.12	.05	.13**

Note. R^2 *= .01 for Step 1;* ΔR^2 *= .13 for Step 2;* R^2 *= .14 for Step 2;* ΔR^2 *= .19 for Step 3;* R^2 *= .33 for Step 3.*

* $p < .05$. ** $p < .01$. *** $p < .001$.

Gender coded: females = 0, males = 1; Hispanic coded: not Hispanic = 0, Hispanic = 1; African American coded: not African American = 0, African American = 1; Asian American/Pacific Islander coded: not Asian = 0, Asian = 1; Grade Level coded: seventh grade = 0, eighth grade =1; Socioeconomic Status coded: not free/reduced = 0, free/reduced lunch = 1.

The third model in this regression was also found to be significant, F (18, 501) = 3.54, $p < .001$, $R^2\Delta = .03$ when the motivational belief variables were added. Four of the eighteen predictor variables contributed significantly to the prediction of student attendance rate: gender ($\beta = .10$, $p = .02$), belonging ($\beta = .20$, $p = .00$), value of school success ($\beta = .21$, $p = .00$), and mastery-avoidance goal orientation ($\beta = -.11$, $p = .04$). When these variables were added, Asian status ($\beta = .14$, $p = .09$) and affirmation, belonging, and commitment ($\beta = .09$, $p = .13$), were no longer significant predictors of student attendance; see Table 4.9.

Table 4.9
Results of Hierarchical Multiple Linear Regression Predicting Student Attendance Rate (N = 589)

Predictor Variable	*B*	*SE B*	β
Step 1			
Gender	.06	.03	.09*
Hispanic	-.01	.07	-.02
African American	-.00	.07	-.00
Asian American/Pacific Islander	.14	.07	.16
Grade Level	-.02	.03	-.03
Socioeconomic Status	-.03	.03	-.05
Step 2			
Gender	.06	.03	.10*
Hispanic	.00	.07	.00
African American	-.00	.07	.00
Asian American/Pacific Islander	.14	.07	.16*
Grade Level	-.01	.03	-.02
Socioeconomic Status	-.03	.03	-.04
Affirmation, Belonging, and Commitment	.05	.02	.13*
Exploration and Behaviors	-.02	.02	-.05
Acceptance	-.05	.03	-.12
Rejection	.01	.01	.02
Belonging	.07	.02	.21***
Perception of Teachers' Opinions	.01	.02	.04
Step 3			
Gender	.07	.03	.10*
Hispanic	-.01	.07	-.02
African American	-.02	.07	-.03
Asian American/Pacific Islander	.12	.07	.14
Grade Level	-.01	.03	-.02
Socioeconomic Status	-.03	.03	-.04
Affirmation, Belonging, and Commitment	.03	.02	.09

Exploration and Behaviors	-.00	.02	-.01
Acceptance	-.05	.03	-.12
Rejection	.01	.01	.05
Belonging	.06	.02	.20***
Perception of Teachers' Opinions	.01	.02	.02
Academic Self-Efficacy	-.01	.03	-.03
Value of School Success	.09	.03	.21***
Mastery-Approach Goal Orientation	-.02	.02	-.04
Mastery-Avoidance Goal Orientation	-.03	.02	-.11*
Performance-Approach Goal Orientation	-.02	.02	-.06
Performance-Avoidance Goal Orientation	.00	.02	.01

Note. R^2 *= .04 for Step 1;* ΔR^2 *= .04 for Step 2;* R^2 *= .09 for Step 2;* ΔR^2 *= .03 for Step 3;* R^2 *= .11 for Step 3.*

* $p < .05$. ** $p < .01$. *** $p < .001$.

Gender coded: females = 0, males = 1; Hispanic coded: not Hispanic = 0, Hispanic = 1; African American coded: not African American = 0, African American = 1; Asian American/Pacific Islander coded: not Asian = 0, Asian = 1; Grade Level coded: seventh grade = 0, eighth grade =1; Socioeconomic Status coded: not free/reduced = 0, free/reduced lunch = 1.

Hierarchical Multiple Linear Regressions Investigating Academic Achievement

In addition to school engagement, academic achievement was another outcome variable analyzed in this study. This next set of hierarchical multiple linear regressions include three separate regressions with four steps each for each of the academic achievement outcome variables (overall language arts grades, overall academic average, and reading achievement score). In the first step, gender, minority status, grade level, and socioeconomic status were included as control variables to see how they related to academic achievement. All of these personal characteristic variables were entered as

dummy variables: gender (e.g., female = 0, male = 1), Hispanic (e.g., not Hispanic = 0, Hispanic = 1), African American (e.g., not African American = 0, African American = 1), Asian American/Pacific Islander (e.g., not Asian = 0, Asian = 1), grade (e.g., seventh grade = 0, eighth grade =1), socioeconomic status (e.g., not free and reduced lunch = 0, free and reduced lunch = 1). These personal characteristics were included as control variables because previous research studies have found gender, minority status, grade level, and socioeconomic status differences with regard to student overall language arts averages, overall academic averages, and reading achievement scores.

In the second step, the two components of ethnic identity and the four components of sense of belonging were included as a block to ascertain how they related to academic achievement. In step three, the motivation variables (academic self-efficacy and valuation of school success) and achievement goal orientation variables (mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation) were entered as a block to examine the relation to academic achievement. Next, the school engagement variables (effort, persistence, procrastination, and attendance) were entered. These variables were entered to see if they added anything above and beyond the sense of belonging, ethnic identity, and motivational belief variables.

Hierarchical Multiple Linear Regression with the Criterion Variable of Overall Language Arts Grades

The first regression in this second set of hierarchical multiple linear regressions addressed the overall language arts grades as the criterion variable. The first model in this hierarchical multiple linear regression was found to be significant, F (6, 513) = 11.12, p

<.001, R^2 = .12, with the variance in overall language arts average grades accounted for by gender (β = -.16, *p* = .00) and grade level (β = .13, *p* = .00). This indicated that females had higher overall language arts averages than their male classmates and that eighth graders had higher overall language arts averages than the seventh graders. In the second model, the two ethnic identity and four sense of belonging variables were added to the equation, and the model was also found to be statistically significant, *F* (12, 507) = 8.02, *p* < .001, R^2 = .16. This model was significant, *p* = .00, with these six variables accounting for a $R^2\Delta$ of 4.5% in average language arts grades. Specifically, three of the twelve predictor variables were significant: gender (β = -.14, *p* = .00), grade level (β = .14, *p* = .00), and belonging (β = .13, *p* = .01). The second model produced a total R^2 = .16.

In the third model, academic self-efficacy, value of school success, and the achievement goal orientations were added to the equation. This model was also found to be significant, *F* (18, 501) = 8.51, *p* < .001, R^2 = .23. Six of the eighteen predictor variables, gender (β = -.14, *p* = .00), grade level (β = .12, *p* = .00), academic self-efficacy (β = .17, *p* = .00), value of school success (β = .20, *p* = .00), mastery-avoidance goal orientation (β = -.12, *p* = .01), and performance-avoidance goal orientation (β = -.12, *p* = .03) contributed significantly to the prediction of student overall language arts averages. However, when these variables were added to the third model, belonging (β = .09, *p* = .07) was no longer significant. The third model produced a total of R^2 = .23.

The fourth model in this regression was also found to be significant, *F* (22, 497) = 11.00, *p* < .001, R^2 = .33. Seven of the twenty-two predictor variables contributed

Table 4.10
Results of Hierarchical Multiple Linear Regression Predicting Overall Language Arts Average Grade (N = 589)

Predictor Variable	*B*	*SE B*	β
Step 1			
Gender	-2.52	.68	-.16***
Hispanic	-2.66	1.66	-.16
African American	-2.44	1.63	-.15
Asian American/Pacific Islander	2.66	1.77	.12
Grade Level	2.06	.67	.13**
Socioeconomic Status	-.87	.69	-.05
Step 2			
Gender	-2.30	.67	-.14***
Hispanic	-2.28	1.63	-.14
African American	-2.39	1.60	-.15
Asian American/Pacific Islander	2.63	1.74	.12
Grade Level	2.18	.66	.14***
Socioeconomic Status	-.76	.68	-.05
Affirmation, Belonging, and Commitment	.88	.52	.09
Exploration and Behaviors	-.34	.47	-.04
Acceptance	-.42	.60	-.04
Rejection	-.48	.32	-.06
Belonging	.98	.40	.13*
Perception of Teachers' Opinions	.66	.44	.08
Step 3			
Gender	-2.22	.65	-.14***
Hispanic	-2.31	1.58	-.14
African American	-2.82	1.55	-.18
Asian American/Pacific Islander	2.05	1.68	.09
Grade Level	1.95	.64	.12**
Socioeconomic Status	-.40	.66	-.03
Affirmation, Belonging, and Commitment	.23	.52	.02

Exploration and Behaviors	.13	.47	.02
Acceptance	-.68	.58	-.07
Rejection	-.21	.33	-.03
Belonging	.70	.39	.09
Perception of Teachers' Opinions	.23	.44	.03
Academic Self-Efficacy	1.77	.59	.17**
Value of School Success	2.20	.66	.20***
Mastery-Approach Goal Orientation	-.64	.53	-.07
Mastery-Avoidance Goal Orientation	-.93	.38	-.12*
Performance-Approach Goal Orientation	.27	.43	.04
Performance-Avoidance Goal Orientation	-.94	.42	-.12*
Step 4			
Gender	-2.63	.62	-.16***
Hispanic	-1.79	1.49	-.11
African American	-2.28	1.46	-.14
Asian American/Pacific Islander	1.49	1.58	.07
Grade Level	2.11	.61	.13**
Socioeconomic Status	-.23	.62	-.01
Affirmation, Belonging, and Commitment	.09	.49	.01
Exploration and Behaviors	.16	.44	.02
Acceptance	-.32	.55	-.03
Rejection	.16	.32	.02
Belonging	.36	.37	.05
Perception of Teachers' Opinions	.17	.42	.02
Academic Self-Efficacy	1.46	.57	.14**
Value of School Success	1.15	.64	.10
Mastery-Approach Goal Orientation	-1.18	.52	-.13*
Mastery-Avoidance Goal Orientation	-.10	.38	-.01
Performance-Approach Goal Orientation	.36	.42	.05
Performance-Avoidance Goal Orientation	-.65	.40	-.09
Effort	.65	.50	.07

Persistence	1.08	.50	.12*
Procrastination	-.95	.46	-.11*
Attendance Rate	5.86	.98	.24***

Note. R^2 *= .12 for Step 1;* ΔR^2 *= .05 for Step 2;* R^2 *= .16 for Step 2;* ΔR^2 *= .08 for Step 3;* R^2 *= .23 for Step 3;* ΔR^2 *= .09 for Step 4;* R^2 *= .33 for Step 4.*
* $p < .05$. ** $p < .01$. *** $p < .001$.
Gender coded: females = 0, males = 1; Hispanic coded: not Hispanic = 0, Hispanic = 1; African American coded: not African American = 0, African American = 1; Asian American/Pacific Islander coded: not Asian = 0, Asian = 1; Grade Level coded: seventh grade = 0, eighth grade =1; Socioeconomic Status coded: not free/reduced lunch = 0, free/reduced lunch = 1.

significantly to the prediction of overall language arts average grades: gender (β = -.16, *p* = .00), grade level (β = .13, *p* = .00), academic self-efficacy (β = .14, *p* = .01), mastery-approach goal orientation (β = -.13, *p* = .02), persistence (β = .12, *p* = .03), procrastination (β = -.11, *p* = .04), and attendance (β = .24, *p* = .00). However, when these variables were added to the fourth model, value of academic success (β = .10, *p* = .07), mastery-avoidance goal orientation (β = -.01, *p* = .79), and performance-avoidance goal orientation (β = -.09, *p* =.11) were no longer significant in predicting student overall language arts averages. The fourth model produced a total of R^2 = .33; see Table 4.10.

Hierarchical Multiple Linear Regression with the Criterion Variable of Overall Academic Averages

The second hierarchical multiple linear regression addressed overall academic averages as the criterion variable. The first model in this hierarchical multiple linear regression was found to be significant, F (6, 513) = 13.30, p <.001, R^2 = .14.; see Table 4.11. This means that the personal characteristic variables contributed significantly to the

prediction of overall academic averages, specifically gender (β = -.15, *p* = .00), Hispanic status (β = -.27, *p* = .01), and African American status (β = -.26, *p* = .01). This indicated that females had higher overall language arts averages than their male classmates and that students who were Hispanic and African American had lower overall language arts averages than the Caucasian and Asian American/Pacific Islander students. Ethnic identity and sense of belonging components were added to the second model, which was also found to be significant, F (12, 507) = 10.75, $p < .001$, $R^2 = .20$. Six of the twelve predictor variables contributed significantly to the prediction of student overall academic averages: gender (β = -.13, *p* = .00), Hispanic status (β = -.24, *p* = .01), African American status (β = -.24, *p* = .01), affirmation, belonging, and commitment (β = .20, *p* = .00), exploration and behaviors (β = -.11, *p* = .03), and belonging (β = .11, *p* = .02).

The motivational belief variables were added to the third model. This model was also found to be significant, F (18, 501) = 11.88, $p < .001$, $R^2 = .30$. When these variables were added to the model, exploration and behavior (β = -.04, *p* = .43), and belonging (β = .08, *p* = .11) were no longer significant. However, six of the eighteen variables contributed significantly to the prediction of student overall academic grade averages: gender (β = -.11, *p* = .00), Hispanic status (β = -.25, *p* = .01), African American status (β = -.27, *p* = .00), affirmation, belonging, and commitment (β = .10, *p* = .05), academic self-efficacy (β = .14, *p* = .01), and value of academic success (β = .33, *p* = .00).

The fourth model in this regression, with school engagement variables added, was also found to be significant, F (22, 497) = 15.59, $p < .001$, $R^2 = .41$. Nine of the twenty-two predictor variables contributed significantly to the prediction of student overall academic average: gender (β = -.15, *p* = .00), Hispanic status (β = -.22, *p* = .01), African

Table 4.11
Results of Hierarchical Multiple Linear Regression Predicting Overall Academic Averages (N = 589)

Predictor Variable	*B*	*SE B*	β
Step 1			
Gender	-2.12	.59	-.15***
Hispanic	-3.99	1.45	-.27**
African American	-3.61	1.42	-.26*
Asian American/Pacific Islander	2.04	1.54	.11
Grade Level	.09	.59	.01
Socioeconomic Status	-1.13	.60	-.08
Step 2			
Gender	-1.78	.58	-.13**
Hispanic	-3.57	1.40	-.24*
African American	-3.43	1.38	-.24*
Asian American/Pacific Islander	2.06	1.49	.11
Grade Level	.16	.57	.01
Socioeconomic Status	-.89	.59	-.06
Affirmation, Belonging, and Commitment	1.63	.45	.20***
Exploration and Behaviors	-.87	.41	-.11*
Acceptance	.26	.51	.03
Rejection	-.11	.28	-.02
Belonging	.78	.34	.11*
Perception of Teachers' Opinions	.40	.38	.06
Step 3			
Gender	-1.59	.55	-.11**
Hispanic	-3.69	1.33	-.25**
African American	-3.84	1.31	-.27**
Asian American/Pacific Islander	1.47	1.42	.08
Grade Level	.06	.54	.00
Socioeconomic Status	-.59	.56	-.04
Affirmation, Belonging, and Commitment	.87	.44	.10*

Exploration and Behaviors	-.31	.39	-.04
Acceptance	.06	.49	.01
Rejection	.06	.28	.01
Belonging	.53	.33	.08
Perception of Teachers' Opinions	-.13	.37	-.02
Academic Self-Efficacy	1.34	.50	.14**
Value of School Success	3.21	.56	.33***
Mastery-Approach Goal Orientation	-.85	.45	-.10
Mastery-Avoidance Goal Orientation	-.54	.32	-.08
Performance-Approach Goal Orientation	-.38	.36	-.06
Performance-Avoidance Goal Orientation	-.60	.36	-.09
Step 4			
Gender	-2.05	.51	-.15***
Hispanic	-3.28	1.23	-.22**
African American	-3.45	1.21	-.24**
Asian American/Pacific Islander	.84	1.31	.04
Grade Level	.18	.50	.01
Socioeconomic Status	-.42	.51	-.03
Affirmation, Belonging, and Commitment	.66	.41	.08
Exploration and Behaviors	-.27	.36	-.03
Acceptance	.41	.45	.05
Rejection	.28	.27	.04
Belonging	.11	.31	.02
Perception of Teachers' Opinions	-.13	.35	-.02
Academic Self-Efficacy	1.23	.47	.13**
Value of School Success	2.27	.53	.23***
Mastery-Approach Goal Orientation	-1.10	.43	-.13*
Mastery-Avoidance Goal Orientation	.14	.31	.02
Performance-Approach Goal Orientation	-.21	.34	-.03
Performance-Avoidance Goal Orientation	-.41	.33	-.06
Effort	-.05	.42	-.01

Persistence	.88	.41	.11*
Procrastination	-.89	.38	-.12*
Attendance Rate	6.48	.81	.29***

Note. R^2 *= .14 for Step 1;* ΔR^2 *= .07 for Step 2;* R^2 *= .20 for Step 2;* ΔR^2 *= .10 for Step 3;* R^2 *= .30 for Step 3;* ΔR^2 *= .11 for Step 4;* R^2 *= .41 for Step 4.*
* $p < .05$. ** $p < .01$. *** $p < .001$.
Gender coded: females = 0, males = 1; Hispanic coded: not Hispanic = 0, Hispanic = 1; African American coded: not African American = 0, African American = 1; Asian American/Pacific Islander coded: not Asian = 0, Asian = 1; Grade Level coded: seventh grade = 0, eighth grade =1; Socioeconomic Status coded: not free/reduced lunch = 0, free/reduced lunch = 1.

American status (β = -.24, *p* = .01), academic self-efficacy (β = .13, *p* = .01), value of academic success (β = .23, *p* = .00), mastery-approach goal orientation (β = -.13, *p* =.01), persistence (β = .11, *p* = .03), procrastination (β = -.12, *p* = .02), and student attendance rate (β = .29, *p* = .00). When the school engagement variables were added, affirmation, belonging, and commitment was no longer significant ((β = .08, *p* = .11); see Table 4.11.

Hierarchical Multiple Linear Regression with the Criterion Variable of Reading Achievement Test Scores

The third hierarchical multiple linear regression addressed the reading achievement test scores as the criterion variable. The first model in this hierarchical multiple linear regression was found to be significant, F (6, 513) = 15.46, p <.001, R^2 = .15. This means that the personal characteristic variables contributed significantly to the prediction of reading achievement assessment scores, specifically gender (β = -.09, *p* = .03), grade level (β = .30, *p* = .00), and socioeconomic status (β = -.14, *p* = .00). This indicated that females had higher scores on the reading achievement test than their male

classmates, that eighth grade students had higher scores on the reading achievement test than the seventh graders, and that students who were not on free/reduced lunch had lower scores on the reading achievement test than the students who had free/reduced lunches. The second model, with ethnic identity and sense of belonging variables added, was also found to be significant, F (12, 507) = 10.93, $p < .001$, $R^2 = .21$. Four of the twelve predictor variables contributed significantly to the prediction of student reading achievement scores: grade level (β = .31, p = .00), socioeconomic status (β = -.13, p = .00), affirmation, belonging, and commitment (β = .24, p = .00), and exploration and behaviors (β = -.17, p = .00).

Motivational belief variables were added to the third model, and this regression was also found to be statistically significant, F (18, 501) = 11.16, $p < .001$, $R^2 = .29$. However, exploration and behavior (β = -.10, p = .06) was no longer significant in this model. Eight of the eighteen variables contributed significantly to the prediction of student reading achievement scores: gender (β = -.08, p = .04), grade level (β = .28, p = .00), socioeconomic status (β = -.11, p = .00), affirmation, belonging, and commitment (β = .19, p = .00), academic self-efficacy (β = .18, p = .00), value of academic success (β = .22, p = .00), mastery-approach goal orientation (β = -.24, p = .00), and performance-approach goal orientation (β = -.14, p = .01).

The fourth model in this regression was also found to be significant, F (22, 497) = 11.01, $p < .001$, $R^2 = .033$, with school engagement variables included. Nine of the twenty-two predictor variables contributed significantly to the prediction of student reading achievement scores: gender (β = -.10, p = .01), grade level (β = .29, p = .00), socioeconomic status (β = -.11, p = .01), affirmation, belonging, and commitment (β =

.17, *p* = .00), academic self-efficacy (β = .19, *p* = .00), value of academic success (β = .17, *p* = .00), mastery-approach goal orientation (β = -.23, *p* = .00), performance-approach goal orientation (β = -.12, *p* = .03), and attendance rates (β = .19, *p* = .00); see Table 4.12.

Table 4.12.
Results of Hierarchical Multiple Linear Regression Predicting Reading Achievement Score (N = 589)

Predictor Variable	*B*	*SE B*	β
Step 1			
Gender	-.18	.08	-.09*
Hispanic	-.28	.20	-.13
African American	-.18	.20	-.09
Asian American/Pacific Islander	.09	.22	.03
Grade Level	.61	.08	.30***
Socioeconomic Status	-.29	.09	-.14***
Step 2			
Gender	-.16	.08	-.08
Hispanic	-.26	.20	-.12
African American	-.15	.19	-.07
Asian American/Pacific Islander	.06	.21	.02
Grade Level	.62	.08	.31***
Socioeconomic Status	-.27	.08	-.13***
Affirmation, Belonging, and Commitment	.28	.06	.24***
Exploration and Behaviors	-.19	.06	-.17***
Acceptance	.01	.07	.01
Rejection	-.05	.04	-.06
Belonging	.06	.05	.06
Perception of Teachers' Opinions	-.02	.05	-.02

Step 3			
Gender	-.16	.08	-.08*
Hispanic	-.29	.19	-.14
African American	-.17	.19	-.09
Asian American/Pacific Islander	-.03	.20	-.01
Grade Level	.57	.08	.28***
Socioeconomic Status	-.23	.08	-.11**
Affirmation, Belonging, and Commitment	.22	.06	.19***
Exploration and Behaviors	-.11	.06	-.10
Acceptance	.01	.07	.01
Rejection	-.02	.04	-.02
Belonging	.07	.05	.07
Perception of Teachers' Opinions	-.05	.05	-.05
Academic Self-Efficacy	.25	.07	.18***
Value of School Success	.30	.08	.22***
Mastery-Approach Goal Orientation	-.28	.06	-.24***
Mastery-Avoidance Goal Orientation	.01	.05	.01
Performance-Approach Goal Orientation	-.14	.05	-.14**
Performance-Avoidance Goal Orientation	-.09	.05	-.09
Step 4			
Gender	-.20	.08	-.10**
Hispanic	-.27	.19	-.13
African American	-.15	.18	-.08
Asian American/Pacific Islander	-.09	.20	-.03
Grade Level	.58	.08	.29***
Socioeconomic Status	-.22	.08	-.11**
Affirmation, Belonging, and Commitment	.20	.06	.17***
Exploration and Behaviors	-.10	.06	-.09
Acceptance	.04	.07	.03
Rejection	-.01	.04	-.01
Belonging	.03	.05	.03

Perception of Teachers' Opinions	-.04	.05	-.05
Academic Self-Efficacy	.25	.07	.19***
Value of School Success	.23	.08	.17**
Mastery-Approach Goal Orientation	-.28	.07	-.23***
Mastery-Avoidance Goal Orientation	.06	.05	.06
Performance-Approach Goal Orientation	-.11	.05	-.12*
Performance-Avoidance Goal Orientation	-.08	.05	-.08
Effort	-.06	.06	-.05
Persistence	.04	.06	.04
Procrastination	-.09	.06	-.08
Attendance Rate	.61	.12	.19***

Note. R^2 *= .15 for Step 1;* ΔR^2 *= .05 for Step 2;* R^2 *= .21 or Step 2;* ΔR^2 *= .08 or Step 3;* R^2 *= .29 for Step 3;* ΔR^2 *= .04 for Step 4;* R^2 *= .33 for Step 4.*

* $p < .05$. ** $p < .01$. *** $p < .001$.

Gender coded: females = 0, males = 1; Hispanic coded: not Hispanic = 0, Hispanic = 1; African American coded: not African American = 0, African American = 1; Asian American/Pacific Islander coded: not Asian = 0, Asian = 1; Grade Level coded: seventh grade = 0, eighth grade =1; Socioeconomic Status coded: not free/reduced lunch = 0, free/reduced lunch = 1.

CHAPTER V

Discussion and Conclusion

In this chapter, the results from the study are discussed. First, a summary of the study is presented. The summary is followed by a discussion of the researcher's findings and interpretations. Next, the strengths and limitations of the study are discussed. Recommendations for future research are also presented. Finally, the implications for education and the conclusion are addressed.

Overview of the Study

The purpose of the study was to investigate how sense of belonging, ethnic identity, and motivational beliefs (academic self-efficacy, value of academic success, mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation) relate to the criterion variables of school engagement (persistence, effort, procrastination, and attendance) and academic achievement (overall language arts averages, overall academic averages, and reading achievement scores) among adolescents.

Specifically, the hypotheses were that affirmation, belonging, and commitment, exploration and behaviors, acceptance, belonging, academic self-efficacy, value of academic success, mastery-approach goal orientation, and performance-approach goal orientation would be positively related to effort, persistence, and attendance, and negatively related to procrastination (except performance-approach goal orientation, which would be positively related to procrastination). The direction of the associations between the ethnic identity, sense of belonging, and motivational belief variables and school engagement was based on relations found in previous studies (Anderman, L.,

1999; Anderman & Anderman, 1999; Goodenow, 1993a; Hagborg, 1994; Oyserman et al., 2001; Shih, 2008). Rejection, mastery-avoidance goal orientation, and performance-avoidance goal orientation would be negatively related to persistence, effort, and attendance (Moyer & Motta, 1982; Roeser et al., 1996; Shih, 2008; Wolters & Rosenthal, 2000) and positively related to procrastination (Howell & Buro, 2009; Klassen, Krawchuk, & Rajani, 2008; Wolters, 2004).

The second criterion variable measured was academic achievement, specifically overall language arts average, overall academic average, and reading achievement score. Affirmation, belonging, and commitment, exploration and behaviors, acceptance, belonging, academic self-efficacy, value of academic success, mastery-approach goal orientation, and performance-approach goal orientation were hypothesized to be positively related to academic achievement (overall language arts average, overall academic average, and reading achievement score; Altschul et al., 2006; Anderman, E.M., 2002; Goodenow, 1993b; Hagborg, 1998a; Oyserman et al., 2003; Phinney, 1992; Wentzel & Caldwell, 1997). Additionally, it was hypothesized that rejection, mastery-avoidance goal orientation, and performance-avoidance goal orientation would be negatively related to academic achievement (overall language arts average, overall academic average, and reading achievement score; Cury et al., 2006; Elliot & Church, 1997; Elliot & McGregor, 2001; Elliot, McGregor, & Gable, 1999; Harackiewicz et al., 1997). It was also hypothesized that the school engagement variables of effort, persistence, and attendance would be positively related to each of the three academic achievement measures (Liem et al., 2008; Wolters & Rosenthal, 2000). Procrastination was hypothesized to be negatively related to overall language arts average, overall

academic average, and reading achievement score (Klassen et al., 2008). These expected relations were predicted based on typical findings in other studies which investigated the relations between ethnic identity, sense of belonging, motivational beliefs, learner engagement, and academic achievement.

Study Findings and Interpretations

This study examined the relationship between several motivational beliefs, sense of belonging, ethnic identity, school engagement, and academic outcomes at the end of an academic year. Hierarchical multiple linear regression results indicated some expected and unexpected findings.

Student Effort

When examining the hierarchical multiple linear regressions for the school engagement variable of student effort, it was found that none of the personal characteristics of gender, minority status, grade, and socioeconomic status were predictive of effort. However, feeling rejected was found to be a negative predictor of student effort while perceptions of teacher opinion was a positive predictor of student effort. When motivational beliefs were added to the hierarchical multiple linear regression, all of the motivational variables (academic self-efficacy, value of academic success, mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation) were predictors of student effort, along with rejection and perceptions of teachers' opinions. Specifically, mastery-avoidance goal orientation and performance-avoidance goal orientation were negative predictors of student effort, which indicates that students who endorsed these avoidance goal orientations were less likely to put forth effort than

students who did not endorse avoidance goal orientations. Academic self-efficacy, value of academic success, mastery-approach goal orientation, and performance-approach goal orientation were positive predictors of student effort, which indicates that students who had higher academic self-efficacy, valued academic success more, and endorsed mastery-approach goal orientation and performance-approach goal orientation were more likely to put forth more effort than their peers. While examining the entire hierarchical multiple linear regression model, the adoption of mastery-approach goal orientation was the strongest positive predictor of student academic effort, followed by student academic self-efficacy.

Reports from previous studies support the results found in this current study. Student competence beliefs (another conception of self-efficacy beliefs; Trautwein et al., 2009) were found to be a positive predictor of student effort in several studies involving eighth and ninth grade students, supporting the results found in this study. Mastery goal orientation was also found to be predictive of student effort at both the high school level (Miller et al., 1996) and middle school level (Wolters, 2004), and performance-approach goal orientation found to be predictive of effort amongst fifth and sixth graders (Sideridis, 2005). The current findings are also slightly similar to those found by Elliot et al. (1999), where mastery goal orientation and performance-approach goal orientation were both predictive of college students' efforts. However, performance-avoidance goal orientation was not found to be predictive of effort by Elliot et al. (1999), which contradicts the findings in this study where performance-avoidance goal orientation was a negative predictor of effort.

The findings in this study regarding sense of belonging also contradicts previous research which has shown that sense of belonging was predictive of student effort, such that students who had higher sense of belonging (Goodenow, 1992, 1993b) and connectedness (Sanchez et al., 2005) would have higher levels of effort. In this current study, of the four sense of belonging components, only students' feelings of being rejected and perceptions of teachers' opinions were predictive of student effort, negative and positive predictors respectively. Belonging and acceptance may not have been found to be predictive in this study due to the numerous additional variables in the investigation, whereas the Sanchez et al. (2005) study only included gender, sense of belonging, and the interaction effects of both in their hierarchical multiple linear regressions investigating academic outcomes.

Student Persistence

When examining the hierarchical multiple linear regressions of the school engagement variable of student persistence, it was found that none of the personal characteristics of gender, minority status, grade, and socioeconomic status were predictive of persistence. Rejection was the only sense of belonging component to be predictive (negatively) of student persistence, which is consistent with the findings by Baumeister et al. (2005) and Sommer and Baumeister (2002). In simulated scenarios, individuals who were rejected were less likely to persist in their tasks and more likely to terminate their tasks sooner than students who were not excluded (Baumeister et al., 2005). Students who had lower self-esteem also gave up on difficult tasks sooner when primed with rejection cues than students who were not rejected and sooner than students

who were primed with rejection cues yet had higher self-esteem (Sommer & Baumeister, 2002).

However, rejection as a negative predictor of persistence in this study contradicts the results found by Goodenow (1992), where adolescents indicated that sense of belonging was predictive of student persistence. One reason for the contradictory findings may be due to the differences in the construct of sense of belonging, where Goodenow utilized all 18-items in one construct of belonging instead of the four separate constructs (belonging, rejection, acceptance, and perceptions of teachers' opinions) which were utilized in this study.

All but one (performance-approach goal orientation) of the motivational variables (academic self-efficacy, value of academic success, mastery-approach goal orientation, mastery-avoidance goal orientation, and performance-avoidance goal orientation) were predictors of student persistence, along with rejection in the third step of the hierarchical multiple linear regression model. Specifically, mastery-avoidance goal orientation and performance-avoidance goal orientation were negative predictors of student persistence, which indicates that students who endorsed these avoidance goal orientations were less likely to persist in the face of challenges or difficulties than students who did not endorse avoidance goal orientations.

Mastery-approach goal orientation, academic self-efficacy, and value of academic success were found to be positive predictors of student persistence. While examining the entire hierarchical multiple linear regression model, the adoption of mastery-avoidance goal orientation was the strongest negative predictor of student academic persistence,

followed by the adoption of mastery-approach goal orientation, which was the strongest positive predictor of student persistence.

These findings are supported by earlier studies which also investigated motivational beliefs and student persistence. Academic self-efficacy was found to be a negative indirect effect of task disengagement of secondary school students in Singapore (Liem et al., 2008). Miller et al. (1996; utilizing a dichotomous framework) found that mastery goal orientation was a positive predictor of high school students' persistence. Although Elliot et al. (1999) also did not utilize the 2x2 achievement goal framework, their study involving the trichotomous framework also found mastery goal orientation to be predictive of college students' persistence. The results from this study were also consistent with those found by Wolters (2004) where student self-efficacy was a positive predictor of persistence. While using a trichotomous achievement goal framework, Wolters (2004) also found mastery goal orientation to be a positive predictor of student persistence and performance-avoidance goal orientation to be a negative predictor of persistence, findings which are also consistent with the results found in the current study.

The lack of findings regarding performance-approach goal orientation's predictability of student persistence contradicts the findings by Elliot et al. (1999). In their investigation of college students' achievement goal adoptions, study strategies, and academic performance, it was found that performance-approach goal orientation was a positive predictor of student persistence (Elliot et al., 1999). Elliot et al. (1999) had failed to find performance-avoidance goal orientation to be predictive of student persistence. The different age groups of the two studies may be a contributing factor of the differences found in the results. Although mastery-avoidance goal orientation,

performance-approach goal orientation, and performance avoidance goal orientation were not found to be predictors of persistence, Shih (2008) also found that mastery-approach goal orientation was a positive predictor of persistence with her sample of eighth grade students, which further supports the results found in this study.

Student Procrastination

When examining the hierarchical multiple linear regression model of the school engagement variable of procrastination, it was found that none of the personal characteristics of gender, minority status, grade, and socioeconomic status were predictive of procrastination. The hierarchical multiple linear regression model which examined the predictability of the personal characteristics, sense of belonging, ethnic identity, and motivational beliefs on student procrastination indicated that feeling rejected was a positive predictor of student procrastination. None of the ethnic identity variables or the three other sense of belonging components were found to predict procrastination.

When motivational beliefs were added to the hierarchical multiple linear regression, all but one (academic self-efficacy) of the motivational variables (value of academic success, mastery-approach goal orientation, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation) were predictors of student procrastination, along with student feelings of being rejected. Specifically, value of academic success and mastery-approach goal orientation were negative predictors of procrastination. Rejection, mastery-avoidance goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation were positive predictors of student procrastination.

While examining the entire hierarchical multiple linear regression model, the adoption of mastery-avoidance goal orientation was the strongest predictor of student procrastination, followed by student feelings of being rejected.

The procrastination results from this study are both supported and contradicted by past findings. Supporting the lack of relations found between academic self-efficacy and procrastination, academic self-efficacy was also not found to be predictive of procrastination in a study involving an undergraduate sample (Klassen et al., 2008). In a study involving junior high school students, Wolters (2004) found that mastery goal orientation was a negative predictor of procrastination and performance-avoidance goal orientation a positive predictor of procrastination. Howell and Buro (2009) also found mastery-approach goal orientation to be negatively predictive and mastery-avoidance goal orientation to be positively predictive of procrastination in undergraduate students.

However, Wolters (2004) did not find performance-approach goal orientation to be predictive of student procrastination. Howell and Buro (2009) also did not find performance-approach goal orientation and performance-avoidance goal orientation to be predictive of student procrastination. These differences might also be explained by the differences in student age groups in each of these studies. Continued studies including middle school populations are necessary to provide further support for the findings from this study. The results found in this study regarding the lack of predictability of procrastination by academic self-efficacy also contradict the findings in another study. While investigating procrastination and self-regulated learning strategies of college students, perceived self-efficacy was found to be a negative predictor of procrastination (Wolters, 2004). The different findings with regard to academic self-efficacy being a

predictor of procrastination may be due to the differences in age groups and to the different wording of the specific statements measuring self-efficacy (both this current study and Wolters utilized Midgley et al.'s PALS, although Wolters used the 1998 version with sentences adapted for history and psychology courses and the current study utilized the 2000 version with sentences adapted to reflect academic self-efficacy in their language arts class).

Student Attendance Rate

When examining the hierarchical multiple linear regressions of the school engagement variable of attendance rates, it was found that minority status, grade level and socioeconomic status were not predictive of attendance. However, student gender was predictive of student attendance, such that the male students were more likely to have higher attendance rates than the female students. These findings were also suggested by Newman-Ford, Fitzgibbon, Lloyd, and Thomas (2008), where men had higher attendance rates than women with regards to various college courses over time. However, the differences were not statistically significant (Newman-Ford et al., 2008). The hierarchical multiple linear regression models which examined the predictability of the personal characteristics, sense of belonging, ethnic identity, and motivational beliefs on student attendance indicated that several variables were predictors of attendance.

Student sense of belonging was a positive predictor of student attendance, which is supported by several studies that also found sense of belonging to be negatively predictive of adolescent absences (Goodenow, 1993b; Sanchez et al., 2005). The lack of predictability between ethnic identity constructs and student attendance in this study contradicts the findings by Oyserman et al. (2003), who found racial-ethnic identity

connectedness to be a positive predictor of student attendance. This difference may be attributed to the differences between ethnic identity and racial-ethnic identity (Cokley & Chapman, 2008).

The lack of findings regarding perceptions of teachers' opinions and attendance in this study also contradicts the findings by Roeser and Eccles (1998), where positive perceptions of teachers' regard was a negative predictor of truancy. When motivational beliefs were added to the hierarchical multiple linear regression, only two of the motivational variables (value of academic success and mastery-avoidance goal orientation) were predictors of student attendance, along with belonging and gender. Specifically, the adoption of mastery-avoidance goal orientation was a negative predictor of student attendance, which indicates that students who endorsed mastery-avoidance goal orientations were more likely to be absent. When examining the entire hierarchical multiple linear regression model, value of academic success was the strongest predictor of student attendance, followed by student belonging.

Overall Language Arts Averages

The hierarchical multiple linear regression models which examined the predictability of the personal characteristics, sense of belonging, ethnic identity, motivational beliefs, and school engagement on overall language arts averages indicated that gender, student grade level, academic self-efficacy, mastery-approach goal orientation, persistence, procrastination, and attendance were predictors of overall language arts averages. None of the ethnic identity or sense of belonging variables were found to be predictive of overall language arts averages. Specifically, gender, mastery-approach goal orientation, and procrastination were negative predictors of overall

language arts grades. While examining the entire hierarchical multiple linear regression model, student attendance was the strongest predictor of student academic effort, followed by student gender and then academic self-efficacy.

The findings in this study were both supported and contradicted by previous research. Supporting the results found in this study, previous studies have generally found academic self-efficacy to be a positive predictor of course grade, specifically in a junior high school sample (Wolters 2004) and college sample (Zusho et al., 2003). Student competence beliefs (Trautwein et al., 2009) were found to be positive predictors of seventh grade students' end of term report card grades. Miller et al. (1996) also found persistence to be a positive predictor of academic achievement, as found in this study.

Regarding the lack of relations found between sense of belonging, ethnic identity, and overall language arts averages in this study, Booker (2004) also found that sense of belonging was not a predictor of overall language arts grades. Guzman et al. (2005) also failed to find ethnic identity as a predictor of academic achievement, although components of racial-ethnic identity (connectedness and embedded achievement) were found to be positive predictors of student grades (Oyserman et al., 2003).

The current achievement findings also contradict previous results in several areas. Zusho et al. (2003) found task value to be a positive predictor of performance in a college chemistry class. However, value of academic success was not found to be predictive of overall language arts averages in this study. While this current study found mastery-approach goal orientation to be a negative predictor of overall language arts goal, learning (mastery) goal orientation has been found to be a positive predictor of college students' grades (Grant & Dweck, 2003). In other studies, mastery goal orientation was

not found to be predictive of junior high school students' achievement (Cury et al., 2006; Wolters, 2004), although mastery-approach goal orientation was found to be a negative predictor of overall language arts averages in this study.

Also contradicting the current results that performance goal orientations were not found to be predictive of overall language arts grades, a previous study found the adoption of performance goal orientation to be a positive predictor of college students' grades (Harackiewicz et al., 2000). Performance-approach goal orientation was found to be a positive predictor of student grades in another study (Elliot & Church, 1997). Performance-approach and performance-avoidance were also found to be positively and negatively predictive, respectively, of middle school students' grades (Cury et al., 2006). Similarly, performance-avoidance goal orientation was found to be a negative predictor of performance in two previous studies (Elliot & Church, 1997; Elliot et al., 1999), which was not found in this study.

Overall Academic Averages

The hierarchical multiple linear regression model which examined the predictability of the personal characteristics, sense of belonging, ethnic identity, motivational beliefs, and school engagement on overall academic averages indicated that gender, status as a Hispanic student, status as an African-American student, academic self-efficacy, value of academic success, mastery-approach goal orientation, persistence, procrastination, and attendance were predictors of overall academic averages. Specifically, gender, status as a Hispanic student, status as an African-American student, mastery-approach goal orientation, and procrastination were negative predictors of overall academic grades. This means that females had lower overall academic averages

than the boys, that Hispanics and African American students had lower overall academic averages than non-Hispanic and non-African American students, and that students who adopted mastery-approach goal orientation and tended to procrastinate were more likely to have lower academic averages than their peers. While examining the entire hierarchical multiple linear regression model, student attendance was the strongest predictor of student academic effort, followed by student status as an African-American student and value of academic success.

The findings in this study were supported by several past studies. In a previous study, it was found that minority status was predictive of student academic achievement. Specifically, the status as an African American student was negatively predictive of student grades (Sha, 2007). Sense of belonging was not found to be predictive of overall academic grades in this study. This was supported by previous studies (Freeman et al., 2007; Sanchez et al., 2005), although perceptions of teachers' regards was found to be a positive predictor of student grade point averages (Roeser & Eccles, 1998). Other studies also contradict these findings, indicating group membership to be a positive predictor of student grade point averages (Anderman, E. M., 2002; Goodenow, 1993b; Oyserman et al., 2003; Wentzel & Caldwell, 1997).

The study by Roeser et al. (1996) both supports and contradicts the findings in this study. Race and academic self-efficacy were also found to be predictors of eighth grade students' grade point averages. However, Roeser et al. (1996) also found socioeconomic status and feelings of belonging in school to be positive predictors of student grade point averages, findings not found in the current study. Another contradiction to the results of mastery-approach goal orientation as a negative predictor

of overall academic averages, Roeser et al. (1996) found personal task goal to be a positive predictor of student grade point averages.

Achievement goal orientation results found in this study contradict those found by Witkow and Fuligni (2007). Mastery-approach goal orientation was found to be a negative predictor of overall academic average in this study, while none of the other three achievement goal orientations were found to be predictors. Although Witkow and Fuligni also found performance-avoidance to be non-predictive, they found mastery-avoidance goal orientation to be a negative predictor of grade point averages. Mastery-approach goal orientation and performance-approach goal orientation were also found to be positive predictors of student grade point averages (Witkow & Fuligni), which further contradicts current findings.

Procrastination was found to be a negative predictor of cumulative grade point average among college undergraduates (Jackson et al., 2003), which supports the results found in this study. Persistence as a positive predictor of overall academic averages was also supported by the results found by Miller et al. (1996).

Reading Achievement Scores

The hierarchical multiple linear regression models which examined the predictability of the personal characteristics, sense of belonging, ethnic identity, motivational beliefs, and school engagement on reading achievement scores indicated that gender, grade level, socioeconomic status, affirmation and belonging, academic self-efficacy, value of academic success, mastery-approach goal orientation, performance-approach goal orientation, and attendance were predictors of reading achievement scores. Specifically, gender, socioeconomic status, mastery-approach goal orientation, and

performance-approach goal orientation were negative predictors of reading achievement scores, and student grade level, affirmation, belonging, and commitment, academic self-efficacy, value of academic success, and attendance were positive predictors.

While examining the entire hierarchical multiple linear regression model, student grade level was the strongest predictor of student reading achievement scores. This result was not too surprising for several reasons. Eighth grade students were on their sixth year of standardized testing and may be less stressed than the seventh graders. According to state regulations, eighth grade students were also given up to three opportunities to pass the reading assessment. Furthermore, student success initiative guidelines indicate that students who failed to demonstrate mastery of the reading objectives by the third administration would be retained. It was very possible that some of the eighth grade participants in this study were retained, and their scores on the exams in subsequent years would be slightly better than before due to the double exposure to objectives and to the intensive interventions provided by schools to students who have been retained.

The lack of findings regarding sense of belonging in this study could indicate that perhaps the students relied less on the support of teachers and peers in estimating how they will do in school. This sample consisted of seventh and eighth grade students who were only at their middle school for two years before moving on. Perhaps sense of belonging was not as important to students at this campus because they were focused on graduating from middle school and moving forward to high school.

Supporting the findings that academic self-efficacy was a predictor of standardized reading assessment scores, Skidmore (2003) reported self-efficacy as the only predictor of final examination grades in an introductory psychology class. The

current findings that performance-approach goal orientation was a negative predictor of reading achievement scores and not academic averages, and that performance-avoidance goal orientation was not a predictor of any of the academic outcomes, contradict previous findings. Cury et al. (2006) found performance-approach to be a positive predictor of student performance and performance-avoidance goal orientation to be a negative predictor of middle school performance. Another study involving students enrolled in college chemistry courses found performance-approach goal orientation to be a positive predictor of student grades, and performance-avoidance goal orientation a negative predictor (Sha, 2007).

Persistence and procrastination were not predictive of reading achievement scores. These findings could be due to the nature of the reading achievement exam. The assessment encompassed just one school day out of the entire school year. Students did not have a chance to procrastinate in taking the test. The statements regarding effort, persistence, and procrastination were also geared towards their language arts class, not geared towards this one assessment. Further studies that may include statements regarding effort, persistence, and procrastination on standardized assessments may be necessary.

Summary of Discussion

Despite some unexpected findings, the hierarchical multiple linear regressions conducted in this study did have some important results. Previous studies indicated the positive correlation between sense of belonging and school attendance, (Anderman, E. M., 2002; Goodenow, 1993b; Sanchez et al., 2005), yet failed to investigate sense of belonging as a predictor variable. In this study, student sense of belonging was found to

be a positive predictor of school attendance. This is an important point for campuses which may experience low student attendance rates. Students who feel as though they belong to a campus, have a vested interest in the school community, are more likely to show up for classes.

Students' perceived teachers' opinions was a positive predictor of student effort. Out of all of the criterion variables, perceived teachers' opinion was only predictive of student effort. This indicates that teachers' opinions matter when it comes to putting forth effort. When students believe that they are respected by the teachers, that the teachers are interested in them, and that there are staff members they can go to for assistance, students are more likely to put forth effort in their school work. This is somewhat similar to student belonging, where sense of school membership become adaptive for student engagement. As there were no other studies which found a fourth factor in the PSSM, this study contributed to the psychological sense of school membership research. However, future factor analyses and studies regarding perceived teachers' opinions are necessary.

Student sense of rejection was a negative predictor of effort and persistence, yet a positive predictor of procrastination. Students who felt that they were being rejected at school put forth less effort and persistence, and instead, engaged in procrastinating actions. Although only Hagborg (1994) indicated rejection as one of the components of the psychological sense of school membership scale, additional analyses were not run to examine relations between rejection and academic outcomes. Other studies which included sense of belonging addressed it as a single variable, without investigating rejection as a component. One could argue that rejection is the opposite of acceptance, in which the results from the current hierarchical multiple linear regressions would be

aligned with previous findings (Goodenow, 1993a, 1993b). The lack of predictability in acceptance, belonging, and perceptions of teachers' opinions may also be due to the factor analyses, which reduced the number of items per factor. Another possible problem may be due to the low scale reliabilities. Although the coefficient alpha for acceptance was .82, the coefficient alphas for belonging and perceptions of teachers' opinions were both .65.

While previous studies indicated that students who reported strong ethnic identities were more likely to have higher self-esteem and psychological well-being, having strong ethnic identity was predictive of only a few of the school engagement and academic outcomes in this study. Affirmation, belonging, and commitment was predictive of attendance, but only in the second model. When the full model was examined, affirmation, belonging, and commitment was no longer a significant predictor of attendance. The ethnic identity component of exploration and behaviors was predictive of procrastination, but also only in the second model.

When the full model was examined, exploration and behaviors was no longer a significant predictor of procrastination. One of the reasons for the lack of findings with regards to ethnic identity may be due to the inclusion of so many other variables of interest, where components of student sense of belonging were more predictive than ethnic identity when examining the criterion variables of student engagement. With 94.4% of the student population and 41% of the staff made up of ethnic minorities, ethnic identity may not be a critical variable at this particular school.

As previous studies implied, students who reported strong ethnic identities had higher self-esteem, purpose in life, self-confidence (Martinez & Dukes, 1997) and coping

skills (Zaff et al., 2002), which may have indirect effects on academic outcomes. In this study, ethnic identity was predictive of overall academic averages, but only in the first and second models. When the full model was examined, ethnic identity was no longer a significant predictor of overall academic average. The results in this current study contradict previous findings. Altschul et al. (2006) found that students high in both connectedness and embedded achievement attained better grade point averages than others.

One of the reasons ethnic identity ended up not being a significant predictor may be due to the inclusion of the motivational beliefs, which were stronger predictors of overall academic averages. However, affirmation, belonging, and commitment was a predictor of reading achievement scores in the full model. This indicates that individual students who had higher scores on the affirmation, belonging, and commitment component of the ethnic identity scale were more likely to have higher scores on the reading achievement exam than their peers who had lower scores on the ethnic identity scales.

Although reading achievement exams are also measures of academic achievement, ethnic identity may have been a significant predictor, even with the addition of the motivational belief variables, because the reading achievement exam was considered an exit exam. These standardized test results are carefully analyzed on each campus in the state, with ethnic breakdowns as part of the criteria for campus ratings per state accountability system, as opposed to the individualized course grades which make up the other achievement outcome variables. If classroom teachers or campus administrators emphasized performances based on ethnicity analyses for rating purposes,

ethnic minority students may have been given additional interventions and support, so that students who had higher scores on the affirmation, belonging, and commitment construct may have felt more compelled to do well on the exam.

Hierarchical multiple linear regression analyses indicated that academic self-efficacy was a predictor of the student engagement variables of effort and persistence. Academic self-efficacy also predicted each of the academic outcomes: overall language arts grades, overall academic averages, and reading achievement scores. This makes sense conceptually, as students who have higher academic self-efficacy would put forth more effort and be more persistent when faced with challenges. Going back to the triadic reciprocality, past experiences play a role in students' motivational beliefs and subsequent behaviors.

The findings in this study are supported by Bandura (1997), who also found academic self-efficacy positively related to higher levels of effort and increased persistence. However, academic self-efficacy was not predictive of procrastination and attendance in this study. These findings contradict the findings by Wolters (2003) who found self-efficacy as one of the strongest independent predictors of procrastination and Klassen et al. (2008), who also found self-efficacy as one of the most predictive variable of procrastination. Further studies to investigate the relation between procrastination and academic self-efficacy are necessary, perhaps without the addition of so many additional variables in the hierarchical multiple linear regression models.

Value of academic success was found to be a positive predictor of all of the school engagement variables except for procrastination, for which it was a negative predictor. Hierarchical multiple linear regression analyses also indicated that value of

academic success was a predictive variable for overall academic averages and reading achievement scores in the third and fourth models of each hierarchical multiple linear regression. Value of academic success was not the strongest predictor for most of the variables, but as a predictor of six of the seven criterion variables, it was one of the most important variables in this study. These results were not conceptually surprising, as students who value academic success would be more likely to put forth effort, persist in the face of difficultly, attend school, have higher overall grade averages, and have higher scores on their achievement exams. Previous research support these results, in which value of academic success was found to be associated with student effort (Wolters & Rosenthal, 2000) and academic achievement (Pintrich & DeGroot, 1990).

Hierarchical multiple linear regression analyses indicated that the adoption of mastery-approach goal orientation was negatively predictive of overall language arts averages, overall academic averages, reading achievement scores, and procrastination, while also positively predictive of effort and persistence. Previous research studies have found mastery goal orientation to be associated with higher levels of choice, effort, and persistence (Wolters, 2004), higher usage of elaboration strategies (Harackiewicz et al., 2000), and not predictive of student grades (Cury et al., 2006; Sideridis, 2005; Wolters, 2004). While the results predicting the school engagement variables were as expected (Elliot et al., 1999; Wolters, 2004), the findings for the achievement outcomes were unexpected.

Most research regarding mastery goal orientation indicated positive relations with motivation and engagement. Two studies even indicated that the adoption of mastery goal orientation was positively predictive of higher grades (Witkow & Fuligni, 2007; Zusho et

al., 2003). However, the adoption of mastery-approach goal orientation as a negative predictor of all three achievement criterion variables in this study was unexpected. The results may again be due to the inclusion of the sense of belonging, ethnic identity, and school engagement variables. Further research which can investigate the 2x2 achievement goal framework and academic achievement in isolation, or which can investigate the main effects and mediating effects of goal orientation adoptions may provide additional support for these findings.

Hierarchical multiple linear regression analyses indicated that mastery-avoidance goal orientation was positively predictive of procrastination and negatively predictive of effort, persistence, and attendance. Students who worry about not learning all that they could are more inclined to procrastinate. They fail to put forth effort and persistence so that they can place the blame for not learning on lack of time. The construct of mastery-avoidance goal orientation is fairly unresearched, but the findings by Elliot and McGregor (2001) indicated that mastery-avoidance goal orientation positively predicted disorganization, worry, and emotionality. It can be implied that these domains would indirectly impact individual achievement, but further studies regarding mastery-avoidance goal orientation is necessary.

Performance-approach goal orientation was positively predictive of both effort and procrastination. This aligns with a previous study which also found performance-approach goal orientation to be positively predictive of effort (Elliot et al., 1999). However, the results regarding procrastination are unexpected. Performance-approach has been found to be a negative predictor (Howell & Buro, 2009) of procrastination instead of a positive predictor.

Performance-approach goal orientation was negatively predictive of reading achievement scores in this study. This finding contradicts previous research which has shown adoption of performance-approach goal orientations to be predictive of higher grade point averages (Cury et al., 2006; Elliot & Church, 1997; Harackiewicz et al., 2000), higher exam scores (Elliot & McGregor, 2001), and higher performance (Elliot et al., 1999). Although performance-approach goal orientation was investigated in this study in conjunction with so many other variables, it was a negative predictor of reading achievement exam scores, and not predictive of overall language arts average or overall academic averages. Perhaps students were no longer worried about academic performance since the research took place during the last week of school, and there were no more exams, assignments, or major projects.

Performance-avoidance goal orientation was found to be negatively predictive of effort and persistence, and positively predictive of procrastination. These findings were to be expected and support those found by Elliot and Church, (1997), Elliot et al. (1999), Elliot and McGregor (2001), and Wolters (2004). However, performance-avoidance goal orientation was not predictive of any of the three achievement outcomes. Again, perhaps the timing of the research impacted the predictability. Another possibility for the lack of predictability may be due to the low scale reliability for the measurement of performance-avoidance goal orientation, a coefficient alpha at .64. Based on these findings, future research exploring the relations between the 2x2 achievement goal orientations and academic achievement are necessary in order to find support for these results.

Hierarchical multiple linear regression analyses regarding school engagements' predictability on the criterion variables of achievement outcomes resulted in expected and unexpected findings. Effort was not found to be a significant predictor of any of the academic achievement outcome variables. This contradicts findings from previous studies which found high school students' engagement to be predictive of standardized test scores (Weiss et al., 2010), academic achievement of adolescents (Liu et al., 2009; Trautwein et al., 2009), and achievement of college students (Diseth et al., 2010). One of the possibilities for this lack of predictability may be due to the low scale reliability for the measurement of effort. The effort scale did not exhibit a strong coefficient alpha at .61. A second possibility for the inconsistency between the results generated in this study and that of previous research could be that effort was investigated in conjunction with other variables (persistence, procrastination, and attendance), some of which were more statistically significant in predicting achievement than effort when studied together.

Persistence was a positive predictor of overall language arts grades and overall academic outcomes, but not predictive of reading achievement scores. These findings indicate that students' persistence was important throughout the school year, as the average grades are calculated throughout the school year. The reading achievement test was only one day, where persistence may be important for completion, but not measured in the same manner as persistence would be for year-long grade averages. This finding was supported by a study conducted on a university campus, where reported persistence was positively related to student effort, which was then a positive predictor of student performance (Jaramillo & Spector, 2004).

Procrastination was a negative predictor of overall language arts averages and overall academic averages. These results indicated that students who reported higher self-handicapping practices were more likely to have lower overall language arts averages and lower overall academic averages. Procrastination tends to be a consistent practice, where one puts off doing work throughout the year, which affects student daily grades and overall averages. Jackson et al. (2003) found that procrastination was a negative predictor of student grade point averages at the university level. However, one study found that procrastination was not predictive of student grades at the college level (Skidmore, 2003).

Student attendance was positively predictive of all three academic outcomes. As students attend school regularly, their grades and performances tend to be higher. These results reemphasize the importance of being present at school for daily lessons, practices, interactions, rehearsals, and work. These findings are also supported by current research, one which found regular attendance to be positively related to student academic attainment (Newman-Ford et al., 2008). Another study conducted with fourteen year olds also confirmed the relation between attendance and academic achievement, where truancy was negatively predictive of student test scores (Claes, Hooghe, & Reeskens, 2009).

Strengths and Limitations of the Study

Many studies have investigated ethnic identity, sense of belonging, and motivational beliefs in regards to academic achievement. Likewise, there have been research studies examining ethnic identity, sense of belonging, and motivational beliefs in regards to school engagement. However, no study to date, has been found which examined all of the variables in conjunction, how ethnic identity, sense of belonging, and

motivational beliefs relate to school engagement and how these relate to academic achievement.

A strength of this study was its contribution to the current literature base. This study adds to achievement goal orientation literature as an investigation of achievement goal orientation utilizing the 2x2 framework with middle school students, with mastery-avoidance found to be a predictor of four of the seven outcome variables. Results obtained in this investigation substantiated many of the relations previously reported in the ethnic identity, sense of belonging, and motivational beliefs literature. In addition to verifying existing relations, the study also provided a more thorough look at the relations between ethnic identity, sense of belonging, motivational beliefs, and school engagement and academic achievement.

Another strength was that students were investigated in their schools, enabling students to participate in a natural environment. Students responded to the survey items based on their experiences while at school. Given the context of the campus and a familiarity with their language arts course, a more authentic environment was created in which student responses could be more valid. Furthermore, the procedures for obtaining permission to survey students and collecting the data followed very strict standards.

Other strengths were also evident in this investigation. Generally, the study used valid and reliable scales with established psychometric properties to measure the predictor and outcome variables (Fuligni et al, 2005; Goodenow, 1993b; Midgley et al., 2000; Roberts et al., 1999; Wolters, 2004). The two ethnic identity components of affirmation, belonging, and commitment and exploration and behavior were confirmed by this study, as indicated by Roberts et al. (1999). The study also contributed to the studies

of sense of belonging, as four factors were found instead of the previously utilized single factor (Goodenow, 1993a) or three factors (Hagborg, 1994).

While the study demonstrated some strong points, there were a few limitations that should be addressed. First, self-report instruments were used, which can be problematic, despite the established reliability of the scales (Fitzpatrick, Sanders, & Worthen, 2004). Even scales with established reliabilities can yield conflicting results across comparable demographics and domains, which can diminish a scale's external validity. Self-reports may yield questionable individual responses, as students may have trouble interpreting items on the scale, and as students may want to present the politically correct answers to reveal themselves in a positive manner, despite the assurances of anonymity (Fitzpatrick et al., 2004). Socially desirable answers may be given by the participants, based on what they believe they should respond, and not be accurate reflections of their true thoughts, beliefs, behavior, or feelings (Fitzpatrick et al., 2004). Although this problem is inherent in self-report measures, socially desirable responses may have been discouraged with the assurances of confidentiality in this study.

Another limitation was with regards to the use of school district assigned ethnicity codes, based on information provided by the parents, for dummy coding variables of ethnicity. The ethnicity codes may not be the true ethnicity students would have chosen for themselves, and did not include mixed ethnicities. Although the questionnaire allowed students to self-ascribe their ethnicity, there were forty-seven different answers provided by the students, which varied too greatly for analyses purposes.

In considering the results of the current study, it should also be noted that students were assessed during the last week of school. The timing may have affected student

responses, as their perceptions and motivations may have shifted from more academic purposes to more social purposes, especially with summer vacation just a few days away. Students may have also chosen to participate only as a socially acceptable practice to please the campus staff or for the free dress pass provided by the campus principal. Students may also have rushed through the items without reading for a thorough understanding of what each item addressed.

There was also a difference in the level of questions in the survey, which added to the limitations in this study. Ethnic identity items were worded to reflect individual students and their beliefs with regards to their family or community. The items from the Psychological Sense of School Membership were worded to reflect the individual students and their beliefs with regards to the school on a more broad level. Academic self-efficacy, effort, persistence, procrastination, and each of the achievement goal orientation items were worded for the classroom level, specifically language arts. In contrast, the value of academic success items were worded in a more global school and educational level. The use of these different levels may have confused the students, and may have resulted in inaccurate analyses or interpretations.

Future Research

While this study yielded a few significant findings, some of the unexpected results raised questions. There continues to be a need to increase the understanding of ethnic identity, sense of belonging, motivational beliefs, and school engagement in academic achievement. Specifically, there are seven directions for future research which should be considered: the relations of sense of belonging with the variables of school engagement, the relations of achievement goal orientations with the academic outcome

variables, the relations of ethnic identity with school engagement, the relations of procrastination with the academic outcome variables, the relations of academic self-efficacy with procrastination and attendance rates, the investigation of all the predictor variables and criterion variables, but at the same level, and the investigation of any interaction effects between the variables.

A large amount of the literature reviewed in this study was in regards to affective domains, from which it was inferred that the constructs of ethnic identity may be predictive of effort, persistence, procrastination, and attendance. However, as ethnic identity variables were found to be non-significant in each model of each hierarchical multiple linear regression with regards to the criterion variables of school engagement, questions regarding their relation still exists.

Past research also indicated that sense of belonging would have predictive effects on academic achievement, test scores, and school engagement. However, as the acceptance, rejection, and perception of teachers' opinions variables were found to be non-significant in each model of each hierarchical multiple linear regression in regards to academic achievement, and acceptance with non-significant results in each model of each hierarchical multiple linear regression in regards to school engagement, questions regarding the lack of direct effects still exist. The constructs of ethnic identity and sense of belonging showed little or no predictability, but perhaps they mediate or are mediated by other factors. By conducting analyses with structural equation modeling (SEM) in future studies, the interrelationships among the variables can be further explored and examined.

Previous literature also indicated that performance-approach goal orientation would be predictive of academic achievement (Cury et al., 2006; Witkow & Fuligni, 2007). However, performance-approach goal orientation was found to be non-significant in each model of each hierarchical multiple linear regression regarding academic achievement, except for the third model in the hierarchical multiple linear regression with reading achievement scores as the criterion variable. Perhaps the goal orientation variables mediate or are mediated by other factors. By conducting analyses with structural equation modeling (SEM) in future studies, the interrelationships among the variable can be further explored and examined.

To minimize the problem of utilizing self-report instruments, which have inherent weaknesses by their nature, different or additional methodologies should be utilized in future research to investigate the relations between ethnic identity, sense of belonging, goal orientations, school engagement, and academic achievement. The use of other motivational factors such as those that have been previously utilized in goal orientation research: intrinsic motivation, higher interest in school, higher use of self-regulatory skills, development of self-confidence, utilization of additional learning strategies, utilization of more cognitive and metacognitive strategies, may bring the research regarding student ethnic identity, sense of belonging, achievement goal orientations, and academic achievement closer to other previous and current research studies (Elliot & Church, 1997; Elliot & Harackiewicz, 1994; Elliot & McGregor, 2001; Elliot et al., 2005; Grant & Dweck, 2003; Harackiewicz & Elliot, 1993; Midgley & Urdan, 2001; Pintrich & Schunk, 2002; Urdan, 1997; Wolters, 2003, 2004; Zusho et al., 2003).

The exploration of classroom goal structure may also assist the researcher in interpreting the results, and may certainly add an additional level of interaction to the study. Observations of students' use of strategies in the classroom or students' participation in extra-curricular activities may be an avenue for future study, as it may be another way to determine school engagement and belonging, and offer more implications for educational practices. Interviews of students may be used for more in-depth investigations, the inclusion of an experimental design, or the use of open-ended items could offer additional insight as well.

Implications for Education

The results of this study demonstrate the importance of academic self-efficacy and value of academic success in academic achievement, as found by other researchers previously mentioned in this study. There is a clear implication for teaching practices with regards to motivation theory, specifically encouraging students to have higher academic self-efficacy and to hold higher values of academic success. Teachers should monitor student goal orientation adoptions so that students who endorse the maladaptive mastery-avoidance goal orientation or the performance-avoidance goal orientation could be encouraged to adopt other goal orientations that are more adaptive to learner engagement and subsequent academic success.

Educators should also facilitate positive goal orientation endorsements by coaching students toward the adoption of mastery-approach goal orientation and putting forth more effort and persistence, which have been found to be positively correlated with each other (Elliot, 1999; Linnenbrink, 2005; Middleton & Midgley, 1997; Wolters, 2004), and which may lead to higher academic achievement.

The results of this study also demonstrate the importance of school engagement in academic achievement. There is a clear indication that persistence and attendance are positive predictors of grades, while attendance is a positive predictor of reading achievement scores. Teachers should encourage students to be more highly engaged in school work, by encouraging them to be persistent, to put forth additional effort, and to be in attendance at school on a regular basis.

There was also an indication of the role affirmation, belonging, and commitment played in predicting student reading achievement scores. While teaching in such a diverse climate, students should be encouraged to accept their ethnicity and commit to having stronger ethnic identities. Building more meaningful relationships between students and the school, between the school and the community, and between the intellectual and emotional needs of the students were recommended as some of the strategies with which to use in order to provide the support adolescents need to successfully remain in high school until graduation (CCAD, 1989; Hagborg, 1998a). Although the sense of belonging findings were not as clear as previous studies indicate, this study showed that having stronger feelings of belonging was a positive predictor of higher attendance rates, and feelings of being rejected was maladaptive to student engagement. Therefore, the school community and classroom teachers should reduce the incidences which may cause students to feel rejected. Instead staff should accept students into the classrooms and school, and help them find a niche within the school so that students may become part of the school community.

Conclusion

This study was conducted to determine if the constructs of ethnic identity, sense of belonging, motivational beliefs, and achievement goal orientations were related to school engagement and academic achievement among middle school students, when studied together. The results in this study emphasize the adaptiveness of academic self-efficacy and value of academic success and their importance in predicting school engagement and school achievement. Although the relations found in this current study were contradictory to existing literature for both sense of belonging and achievement goal orientations, the results corroborated some of the existing relations between belonging and attendance and achievement goal orientations and academic achievement.

The differences found among the sense of belonging research are most likely attributable to the differences between the affective domain and cognitive domains, the differences between the factor analysis results, as well as the different school structure in this district (where middle schools consists of only two grade levels). The differences found among the achievement goal orientations research may be attributed to the specific classroom or campus goal structures. The observations reported in this investigation offer some insight into the factors that might influence both school engagement and academic achievement. Perhaps future empirical research will be able to offer more conclusive findings.

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APPENDICES

APPENDIX A

HUMAN SUBJECTS APPROVAL LETTER

UNIVERSITY of HOUSTON

COMMITTEES FOR THE PROTECTION OF HUMAN SUBJECTS

April 6, 2009

Ms. Ting-Ling Sha
c/o Dr. Shirley Yu
Educational Psychology

Dear Ms. Sha:

The University of Houston Committee for the Protection of Human Subjects (1) reviewed your research proposal entitled "Motivational Beliefs, Ethnic Identity, and Sense of Belonging: Relations to Academic Achievement and School Engagement" on March 27, 2009, according to institutional guidelines.

At that time, your project was granted approval contingent upon your agreement to modify your proposal protocol as stipulated by the Committee. The changes you have made adequately respond to those contingencies made by the Committee; however reapplication will be required:

1. Annually
2. Prior to any change in the approved protocol
3. Upon development of the unexpected problems or unusual complications.

Thus, if you will be still collecting data on this project on **April 1, 2010** you must reapply to this Committee for approval before this date if you wish to prevent an interruption of your data collection procedures.

If you have any questions, please contact Alicia Vargas at (713) 743-9215.

Sincerely yours,

Christy R. Smith for

Dr. Dale Alexander Interim-Chairman
Committee for the Protection of Human Subjects (1)

PLEASE NOTE: (1) All subjects must receive a copy of the informed consent document. If you are using a consent document that requires subject signatures, remember that signed copies must be retained for a minimum of 3 years, or 5 years for externally supported projects. Signed consents from student projects will be retained by the faculty sponsor. Faculty are responsible for retaining signed consents for their own projects; however, if the faculty leaves the university, access must be possible for UH in the event of an agency audit. (2) Research investigators will promptly report to the IRB any injuries or other unanticipated problems involving risks to subjects and others.

Protocol Number: 08222-01 Full Review __X__ Expedited Review_____

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APPENDIX B

ITEMS LISTED BY VARIABLE

Survey Items and Scale Information-75 items

Multigroup Ethnic Identity Measure (MEIM; Roberts, Phinney, Masse, Chen, Roberts, & Romero, 1999)

Affirmation, Belonging, and Commitment $\alpha = .90$

1. I have a clear sense of my ethnic background and what it means for me.
2. I am happy that I am a member of the group I belong to.
3. I have a strong sense of belonging to my own ethnic group.
4. I understand pretty well what my ethnic group membership means to me.
5. I have a lot of pride in my ethnic group and its accomplishments.
6. I feel a strong attachment towards my own ethnic group.
7. I feel good about my cultural or ethnic background.

Exploration Of and Active Involvement in Group Identity $\alpha = .71$

1. I have spent time trying to find out more about my ethnic group, such as its history, tradition, and customs.
2. I am active in organizations or social groups that include mostly members of my own ethnic group.
3. I think a lot about how my life will be affected by my ethnic group membership.
4. To learn more about my ethnic background, I have often talked to other people about my ethnic group.
5. I participate in cultural practices of my own group, such as special food, music, or customs.

Open ended questions:

1. My ethnicity is: _____
2. My father's ethnicity is: _____
3. My mother's ethnicity is: _____

Psychological Sense of School Membership (PSSM) Scale (Goodenow, 1993b; Hagborg, 1994)

Sense of Acceptance α= .82

1. People here notice when I'm good at something.
2. Other students in this school take my opinions seriously.
3. People at this school are friendly to me.
4. I am treated with as much respect as other students.
5. I can really be myself at this school.
6. People here know I can do good work.
7. Other students here like me the way I am.

Sense of Rejection α= .77

1. It is hard for people like me to be accepted here. (reversed)
2. Sometimes I feel as if I don't belong here. (reversed)
3. I feel very different from most other students here. (reversed)
4. I wish I were in a different school. (reversed)

Sense of Belonging α= .65

1. I feel like a real part of (name of school).
2. I am included in lots of activities at (name of school).
3. I feel proud of belonging to (name of school).

Perceptions of Teachers' Opinions α= .65

1. Most teachers at (name of school) are interested in me.
2. There's at least one teacher or other adult in this school I can talk to if I have a problem.
3. ~~Teachers here are not interested in people like me. (reversed)~~
4. The teachers here respect me.

Value of Academic Success Scale (VASS; Fuligni, Witkow, & Garcia, 2005)

Value of Academic Success Scale α= .80

1. (It's important to me) that I do well in school.
2. (It's important to me) that I get good grades.
3. (It's important to me) that I get an 'A' on almost every test.
4. (It's important to me) that I go to college after high school.
5. (It's important to me) that I be one of the best students in my classes.
6. (It's important to me) that I go to the best college after high school.

Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000)

Academic Efficacy Subscale α= .77

1. I'm certain I can master the skills taught in my language arts class this year.
2. I'm certain I can figure out how to do the most difficult class work in my language arts class.
3. I can do almost all the work in my language arts class if I don't give up.
4. Even if the work is hard in my language arts class, I can learn it.
5. I can do even the hardest work in my language arts class if I try.

Mastery Goal-Approach Orientation-Revised α= .86

1. It's important to me that I learn a lot of new concepts in my language arts class this year.
2. One of my goals in my language arts class is to learn as much as I can.
3. One of my goals is to master a lot of new skills in my language arts class this year.
4. It's important to me that I thoroughly understand my language arts class work.
5. It's important to me that I improve my skills this year in my language arts class.

Mastery Goal-Avoidance Orientation-(Elliot & McGregor, 2001; Lindt, 2008) α= .74

1. I worry that I may not learn all that I possibly could in my language arts class.
2. Sometimes I'm afraid that I may not understand the content of my language arts class as thoroughly as I'd like.
3. It makes me stressed when I think that I might not learn all I need to in my language arts class.
4. I am often concerned that I may not learn all that there is to learn in my language arts class.

Performance-Approach Goal Orientation-Revised α= .85

1. It's important to me that other students in my language arts class think I am good at my class work.
2. One of my goals is to show others that I'm good at my class work in language arts class.
3. One of my goals is to show others that my language arts class work is easy for me.
4. One of my goals is to look smart in comparison to the other students in my language arts class.
5. It's important to me that I look smart compared to others in my language arts class.

Performance-Avoidance Goal Orientation-Revised α= .70

1. It's important to me that I don't look stupid in my language arts class.
2. One of my goals is to keep others from thinking I'm not smart in my language arts class.
3. It's important to me that my teacher doesn't think that I know less than others in my language arts class.
4. One of my goals in my language arts class is to avoid looking like I have trouble doing the work.

School Engagement (SE; Wolters, 2004)

Effort α= .61

1. I always work as hard as I can to finish my language arts assignments.
2. ~~I put more effort into my language arts class than I do in my other classes.~~
3. I don't put a lot of effort into finishing my work for my language arts class. (reverse)
4. In my language arts class, I always put a lot of effort into doing my work.

Persistence α= .64

1. I get distracted very easily when I'm studying for my language arts class. (reverse)
2. I get started on doing my work for language arts but often don't stick with it for very long. (reverse)
3. Even if my language arts work is dull or boring, I keep at it until I am finished.
4. I often begin my language arts assignments but give up before I am done. (reverse)

Procrastination α= .74

1. I frequently put off getting started on the readings and assignments for my language arts class.
2. I postpone doing work for my language arts class until the last minute.
3. I promise myself I will do something for my reading class, then put it off anyway.
4. I delay studying for my language arts class, even when it is important.
5. I often find excuses for not starting the work for my language arts class.

APPENDIX C

RESEARCHER’S AND TRAINED ADMINISTRATOR’S SCRIPTS

Initial speech for participation (conducted by staff or student during announcements):

Students, a doctoral student from the University of Houston main campus, Ting-Ling Sha, is looking for volunteers to participate in a research study.

The questionnaire asks for your opinions, beliefs, and attitudes regarding your motivational beliefs, ethnic identity, sense of belonging, and school engagement in language arts class.

Please keep in mind that your participation is voluntary and allowable only with your parent's permission. Your name and answers will be confidential. This project has been reviewed by the University of Houston Committee for the Protection of Human Subjects (713) 743-9204.

Your teachers will be passing out parental consent forms. Please take this home, ask your parents to sign the back page, and return the form to your teacher by _____.

Speech for announcements during week of consent form return:

Good morning ladies and gentlemen, please don't forget to return the parental consent forms so that you can participate in the research which will help a doctoral student from UH. Don't forget to turn in your parent consent forms to your teacher by _____.

Scenario 1: Teacher speech for obtaining student assent:
Students, you are being asked to participate in a study conducted by Ting-Ling Sha, a doctoral student at the University of Houston main campus.

Please keep in mind that your participation is voluntary and allowable only with your parent's permission, however you may decline participation at any time. There is no right or wrong answer. Instead, this survey uses a five point scale, one which looks like a ranking scale.

Students who returned an approved parental permission form will be given this packet. If you did not return a parent consent form, or did not receive parental permission, please work on another assignment or read quietly while the rest of the students participate in this study. (Teacher passes out the packet to students who brought back the consent form).

Before you begin, I'll read the first three pages out loud with you regarding student assent. (Teacher reads aloud the assent form). Are there any questions? Now, if you agree to participate in the study, please print your name, complete, sign, and date the assent form on page 3.

(Determine if students have agreed to participate, if they checked "no", then pick up packet from students and state; "Since you have decided not to participate, please work on another assignment while the others participate.")

Scenario 1: Teacher speech for giving the survey:
To those of you who have assented to participate, we will start by doing some sample items together. This survey will take approximately 40 minutes to complete. Your honest answers will be appreciated. If you have any questions during the questionnaire, please raise your hand. I will answer your question to the best of my ability.

If you have any questions after the survey, please feel free to email the researcher at tsha@uh.edu.

Again, there is no right or wrong answer. Instead, this survey uses a five point scale, one which looks like a ranking scale. Let's look at the first 3 samples together (teacher reads out loud the anchors (1-5), models reading S1, and demonstrates how to circle the corresponding number.)

Now that we have done the sample items together, you will do the rest of the 75-item survey yourself. If you would like assistance, or have any questions, please let me know. When you are finished, I will collect your survey to turn in to the front office. Thank you for participating.

Scenario 2: Teacher speech for sending students to the cafeteria for participation:

Students, you are being asked to participate in a study conducted by Ting-Ling Sha, a doctoral student at the University of Houston main campus.

Students who returned an approved parental permission form will be going down to the cafeteria at this time. If you did not return a parent consent form, or did not receive parental permission, you will stay in class and continue to work quietly. (Teacher calls out the names of the students who brought back the consent form, and sends them to the cafeteria to meet with the researcher).

Scenario 2b Researcher's Script:

To all participants who returned the parental consent forms, the researcher, Ting-Ling Sha, will say the following:

My name is Ting-Ling Sha. I am conducting a survey as part of my Ph.D. requirements for the University of Houston.

Your participation will help me examine the contributing variables to student school engagement and academic achievement.

Please keep in mind that your participation is voluntary and allowable only with your parent's permission, however you may decline participation at any time. Your name will not be used in the study or any future publication, but will be used in order for the researcher to match your language arts exam grade, overall grade point average, attendance records, and federal lunch status with your survey responses. This is not a test; there is no right or wrong answer. Instead, this survey uses a five point scale, one which looks like a ranking scale.

None of your responses will be seen by anyone but me, the researcher; therefore the survey is confidential.

Please keep in mind that your participation is voluntary and allowable only with your parent's permission, however you may decline participation at any time.

I will now give each of you the materials packet. Please do not begin this packet until you are instructed to do so. If you wish to participate, please read the assent form and sign it. A signature must be present as it indicates your approval to be in the study, as well as your permission to obtain your language arts exam grade, overall GPA, attendance record, and federal lunch status with your survey responses.

Now, read over the first two pages of the consent form, which you may keep for your records. If you wish to proceed, you must sign the third page. **[Wait]** Next, turn to page 4 of the survey. Please put your name on the top and answer the following items, again this is a confidential survey. When you are finished with this top portion, stop and wait for further instruction. **[Wait]** Next, to introduce the scale used in this study, I will do three sample questions with you. **[Do sample questions]** I like spending time with my family. Circle 1 if not at all true of you, circle 5 if very true of you, and if it is somewhere in between, circle the number in between that best represents your belief or how you feel. I love watching the Houston Rockets basketball games. Circle 1 if not at all true of you, circle 5 if very true of you, and if it is somewhere in between, circle the number in between that best represents your belief or how you feel. I like to hang out with my friends. Circle 1 if not at all true of you, circle 5 if very true of you, and if it is somewhere in between, circle the number in between that best represents your belief or how you feel.

You may now complete the rest of the survey at your own pace. **Please read each item carefully and answer all of the items.** If you have any questions, please ask me or one of the research assistants. When you are finished, please turn in your materials. Thank you for your participation.

Scenario 3: Teacher speech for sending students to the computer lab for participation:

Students, you are being asked to participate in a study conducted by Ting-Ling Sha, a doctoral student at the University of Houston main campus.

Your participation will help the researcher examine the contributing variables to student school engagement and academic achievement.

Please keep in mind that your participation is voluntary and allowable only with your parent's permission, however you may decline participation at any time. Your name will not be used in the study or any future publication, but will be used in order for the researcher to match your language arts exam grade, overall grade point average, attendance record, and federal lunch status with your survey responses. There is no right or wrong answer. Instead, this survey uses a five point scale, one which looks like a ranking scale.

Students who returned an approved parental permission form will be going down to the computer lab at this time. If you did not return a parent consent form, or did not receive parental permission, you will stay in class and continue to work quietly. (Teacher calls out the names of the students who brought back the consent form, and sends them to the cafeteria to meet with the researcher).

Scenario 3b Researcher's Script:

To all participants who returned the parental consent forms, the researcher, Ting-Ling Sha, will say the following:

My name is Ting-Ling Sha. I am conducting a survey as part of my Ph.D. requirements for the University of Houston. The survey will examine the contributing variables to student school engagement and academic achievement. The survey is not a test; there are no right or wrong answers. None of your responses will be seen by anyone but me, the researcher; therefore the survey is confidential.

Please keep in mind that your participation is voluntary and allowable only with your parent's permission, however you may decline participation at any time.

I will now give each of you a student assent form. If you wish to participate, please read the assent form and sign it. A signature must be present as it indicates your approval to be in the study, as well as your permission to obtain your language arts exam grade, overall GPA, attendance record, and federal lunch status with your survey responses.

Now, read over the first two pages of the consent form, which you may keep for your records. If you wish to proceed, you must sign the third page which you will tear off and turn in to the principal investigator. **[Wait]** Next, turn to the computer which has been set

up for you. Look at the first screen. Please answer the following items regarding your name, age, lunch ID number, grade, and gender. When you are finished with this page, stop and wait for further instruction. **[Wait]** Next, to introduce the scale used in this study, I will do three sample questions with you. **[Do sample questions]**
Sample question 1: I like spending time with my family. Click on the button which best corresponds to your response: button 1 if not at all true of you, button 5 if very true of you, and if it is somewhere in between, the button in between that best represents your belief or how you feel.
Sample question 2: I love watching the Houston Rockets basketball games. Click on the button which best corresponds to your response: button 1 if not at all true of you, button 5 if very true of you, and if it is somewhere in between, the button in between that best represents your belief or how you feel.
Sample question 3: I like to hang out with my friends. Click on the button which best corresponds to your response: button 1 if not at all true of you, button 5 if very true of you, and if it is somewhere in between, the button in between that best represents your belief or how you feel.

You may now complete the rest of the survey at your own pace. **Please read each item carefully and answer all of the items.** If you have any questions, please ask me or one of the research assistants. Thank you for your participation.

APPENDIX D

PARENTAL PERMISSION FORM

UNIVERSITY OF HOUSTON
PARENTAL PERMISSION FORM

PROJECT TITLE: Motivational beliefs, ethnic identity, and sense of belonging: Relations to academic achievement and school engagement.

Your son or daughter is being invited to participate in a research project conducted by Ting-Ling Sha, a graduate student in the Department of Educational Psychology at the University of Houston. The project, which is being conducted to fulfill the requirements of a doctoral dissertation, is being supervised by Professor Shirley L. Yu, Ph.D.

NON-PARTICIPATION STATEMENT
Your student's participation is voluntary and you or your student may refuse to participate or withdraw at any time without penalty or loss of benefits to which your student is otherwise entitled. Your student may also refuse to answer any question. Deciding not to participate will not affect your student's standing, grade, or performance in school.

PURPOSE OF STUDY
The purpose of the project is to examine student motivational beliefs, ethnic identity, sense of belonging, school engagement, and academic achievement in language arts. Motivational beliefs is examined through one's academic efficacy, how one thinks of their personal capabilities, valuation of school, how one values school, and achievement goal orientation, which indicates an individual's purposes or reasons for engaging in achievement behaviors. Ethnic identity is defined as one's sense of self in terms of membership in a particular ethnic group. Student sense of belonging is defined as one's participation in school life, feelings of personal acceptance among classmates, and students' acceptance of and pride in the school. School engagement is defined as the behaviors students engage in, such as effort put forth, persistence in activity, and level of procrastination. Academic achievement is indicated by exam grades in the content of language arts and overall Grade Point Average (GPA). The study will be completed in one session, during one of your student's class periods. If a student is absent the day the survey is given, he/she will have the opportunity to take the survey on a designated make-up day.

PROCEDURES
Your student will be one of approximately 1200 students asked to participate in this project. Students who participate will be given a survey during one class period, by the researcher, or classroom teacher, with the researcher or research assistants from University of Houston available to answer questions. The survey will ask students to report their beliefs and attitudes about their motivational beliefs, ethnic identity, sense of belonging, and school engagement. The items on the survey do not have a right or wrong answer and students will work independently to answer the questions. Students will be given approximately 40-minutes, or one class period, to complete the survey. Additional information such as language arts exam grade, grade point average, federal lunch status, and attendance records will be requested from school records. These records will be obtained to compare student demographic data, as well as to assess student academic achievement and school engagement.

CONFIDENTIALITY

All students' identities will be held in confidence. Every effort will be made to maintain the confidentiality of your students' participation in this project. After obtaining demographic information and academic achievement results from district administrators, each subject's name will be paired with a code number by the principal investigator. This code number will appear on all written materials. The list pairing the subject's name to the randomly assigned code number will be kept separate from all research materials and will be available only to the principal investigator. Confidentiality will be maintained within legal limits.

BENEFITS

While students will not directly benefit from participation, your student's participation may help researchers better understand factors which may affect student achievement and school engagement.

RISKS/DISCOMFORTS

Students will be asked to respond to survey items regarding their ethnic identity (how students feel they identify with their ethnic group) and sense of belonging (how students feel they belong to their class or school). There may be a minimal risk of psychological harm when responding to the items on these two scales, but risks are no greater than would be encountered by students in their daily interactions with peers. If students express a concern during the administration of the survey or express discomfort, teachers will remind them that they may choose to leave answers to specific questions blank or they may choose to withdraw from the study.

ALTERNATIVES

Participation in this project is voluntary and the only alternative to this project is non-participation.

INCENTIVES/REMUNERATION

There will be no incentives or remuneration offered to students for participating in this project by the principal investigator Ms. Ting-Ling Sha.

PUBLICATION STATEMENT

The results of this study may be published in professional and/or scientific journals. It may also be used for educational purposes or for professional presentations. However, neither individual student names nor information regarding teachers or the school will be identified in any published work.

For questions or concerns, please contact any of the following people:

Ms. Ting-Ling Sha tsha@uh.edu or Shirley L. Yu, Ph.D. 713-743-9822

SUBJECT RIGHTS

1. I understand that parental consent is required of all persons under the age of 18 participating in this project. I understand that my student will also be asked to agree to participate.

2. All procedures have been explained to me and I have been provided an opportunity to contact the investigator with any questions I might have regarding my students' participation.

3. Any risks and/or discomforts have been explained to me.

4. Any benefits have been explained to me.

5. I understand that, if I have any questions, I may contact Ting-Ling Sha at tsha@uh.edu. I may also contact Shirley L. Yu, faculty sponsor, at 713-743-9822.

6. I have been told that my student or I may refuse to participate or to stop his/her participation in this project at any time before or during the project. My student may also refuse to answer any question.

7. This project has been reviewed by the University of Houston Committee for the Protection of Human Subjects (713) 743-9204. ANY QUESTIONS REGARDING MY STUDENT'S RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UNIVERSITY OF HOUSTON COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS.

8. All information that is obtained in connection with this project and that can be identified with my student will remain confidential as far as possible within legal limits. Information gained from this study that can be identified with my child may be released to no one other than the principal investigator and Dr. Shirley L. Yu. The results may be published in scientific journals, professional publications, or educational presentations without identifying my student, teacher, or school by name.

I have read the contents of this consent form and have been given contact information if I have questions. I have received answers to my questions.

I give my consent to have my student participate in this study, which includes allowing school administrators to release my students' language arts exam grade, overall GPA, and information regarding attendance record and federal lunch status to the study's investigator, Ting-Ling Sha.

I have retained the first two pages of this consent form for my records and future reference.

Name of student (please print): _____

I agree to have my student participate in this research project: Yes _____ No _____

Name of Parent/ Guardian: _____

Signature of Parent/Guardian: _____

Date: _____ Language Arts Teacher's Name: _____

APPENDIX E

ASSENT TO PARTICIPATE FORM

UNIVERSITY OF HOUSTON
STUDENT ASSENT TO PARTICIPATE IN RESEARCH FORM

PROJECT TITLE: Motivational beliefs, ethnic identity, and sense of belonging: Relations to academic achievement and school engagement.

You are being invited to participate in a research project conducted by Ting-Ling Sha who is a graduate student in the Department of Educational Psychology at the University of Houston. The project, which is being conducted to fulfill the requirements of a doctoral dissertation, is being supervised by Professor Shirley L. Yu, Ph.D.

Your participation is voluntary and you may refuse to participate or withdraw at any time without penalty or loss of benefits to which you are otherwise entitled. You may also refuse to answer any questions. Deciding not to participate will not affect your grade or performance in school.

PURPOSE OF STUDY

The purpose of the project is to examine student motivational beliefs, ethnic identity, sense of belonging, school engagement, and academic achievement in language arts class. Motivational beliefs is examined through one's academic efficacy, how one thinks of their personal capabilities, valuation of school, how one values school, and achievement goal orientation, which indicates an individual's purposes or reasons for engaging in achievement behaviors. Ethnic identity is defined as one's sense of self in terms of membership in a particular ethnic group. Student sense of belonging is defined as one's participation in school life, feelings of personal acceptance among classmates, and students' acceptance of and pride in the school. School engagement is defined as the behaviors students engage in, such as effort put forth, persistence in activity, and level of procrastination. Academic achievement is indicated by a final exam grade in the content of language arts and overall Grade Point Average (GPA). The study will be completed in one session, during one of your class periods. If you are absent the day the survey is given, you will have the opportunity to take the survey on a designated make-up day.

PROCEDURES

All of the students on two campuses in the district, approximately 1200 students, are being asked to participate in this project. Students who participate will be given a survey during one class period by the researcher, or classroom teacher, with the researcher or research assistants from University of Houston available to answer questions. The survey will ask you to report your beliefs and attitudes about your motivational beliefs, ethnic identity, sense of belonging, and academic engagement. These items on the survey do not have a right or wrong answer and you will work independently to answer the questions. You will be given approximately 40-minutes, or one class period, to complete the survey. Additional information such as language arts exam grade, overall grade point average, federal lunch status, and attendance records will be requested from school records. These records will be obtained to compare student demographic data, as well as to assess student academic achievement and school engagement.

CONFIDENTIALITY

All students' identities will be held in confidence. Every effort will be made to maintain the confidentiality of your participation in this project. After obtaining demographic information and academic achievement results from district administrators, your name will be paired with a code number by the principal investigator. This code number will appear on all written materials. The list pairing your name to the randomly assigned code number will be kept confidentially and will be available only to the investigator. Confidentiality will be maintained within legal limits.

BENEFITS

While there is no direct benefit to you as a participant, you may gain satisfaction in knowing that your participation assisted a graduate student in her research to better understand factors which may affect student achievement and school engagement.

RISKS/DISCOMFORTS

You will be asked to respond to survey items regarding your ethnic identity (how you feel you identify with your ethnic group) and sense of belonging (how you feel you belong to your class or school). There may be a minimal risk of psychological harm when responding to the items on these two scales, but risks are no greater than would be encountered by you in your daily interactions with peers. If you express a concern during the administration of the survey or express discomfort, teachers will remind you that you may choose to leave answers to specific questions blank or you may choose to withdraw from the study.

ALTERNATIVES

Your participation in this project is strictly voluntary and the only alternative to this project is non-participation.

INCENTIVES/REMUNERATION

There will be no incentives or remuneration offered to students for participating in this project by the principal investigator Ms. Ting-Ling Sha.

PUBLICATION STATEMENT

The results of this study may be published in professional and/or scientific journals. It may also be used for educational purposes or for professional presentations. However, neither individual student names nor information regarding teachers or the school will be identified in any published work.

For questions or concerns, please contact any of the following people:

Ms. Ting-Ling Sha tsha@uh.edu

Shirley L. Yu, Ph.D. 713-743-9822

SUBJECT RIGHTS

1. I understand that informed parental consent is required of all students participating in this project.

2. All procedures have been explained to me and all my questions have been answered to my satisfaction.

3. Any possible risks and/or discomforts have been explained to me.

4. Any benefits have been explained to me.

5. I understand that, if I have any questions, I may contact Ting-Ling Sha at tsha@uh.edu. I may also contact Shirley L. Yu, faculty sponsor, at 713-743-9822.

6. I have been told that I may refuse to participate or to stop participation in this project at any time before or during the project. I may also refuse to answer any question.

7. This project has been reviewed by the University of Houston Committee for the Protection of Human Subjects (713) 743-9204. ANY QUESTIONS REGARDING MY RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UNIVERSITY OF HOUSTON COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS. ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT THE UNIVERSITY OF HOUSTON ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT.

8. All information that is obtained in connection with this project and that can be identified with me will remain confidential as far as possible within legal limits. Information gained from this study that can be identified with me may be released to no one other than the principal investigator and Dr. Shirley L. Yu. The results may be published in scientific journals, professional publications, or educational presentations without identifying my student, teacher, or school by name.

I have read (or have had read to me) the contents of this assent form and have been encouraged to ask questions. I have received answers to my questions.

I give my assent to participate in this study. I also give permission to district administrators to release my exam grade in language arts class, overall grade point average, and information regarding my attendance records and federal lunch status to the study's investigator, Ting-Ling Sha.

I have retained the first two pages of this consent form for my records and future reference.

Name of student (please print): _____

I agree to participate in this research project: Yes _____ No _____

Signature of Student: _____

Date: _____ Language Arts Teacher's Name: _____

APPENDIX F

STUDENT SCHOOL SURVEY

STUDENT SCHOOL SURVEY

Name: _____ 6-digit Lunch ID #
Age:_____ _____

Please Circle Grade Level:	Please Circle Gender:
7th grade 8th grade	Male Female

The following are sample items:
Please circle the number that corresponds with the statement that best describes what you think:

1=not at all true of me	2=somewhat not true of me	3=neutral	4=somewhat true of me	5=very true of me

		Not at all true of me		Neutral		Very true of me
S1	I like spending time with my family.	1	2	3	4	5
S2	I love watching Houston Rockets basketball games.	1	2	3	4	5
S3	I like to hang out with my friends.	1	2	3	4	5

Here are some questions about yourself as a student in your **language arts** class. Please circle the number that corresponds with the statement that best describes what you think:

1=not at all true of me	2=somewhat not true of me	3=neutral	4=somewhat true of me	5=very true of me

		Not at all true of me		Neutral		Very true of me
1.	Sometimes I'm afraid that I may not understand the content of my language arts class as thoroughly as I'd like.	1	2	3	4	5
2.	I always work as hard as I can to finish my language arts assignments.	1	2	3	4	5
3.	One of my goals is to look smart in comparison to the other students in my language arts class.	1	2	3	4	5
4.	It is important to me that I go to the best college after high school.	1	2	3	4	5

Please continue on next page.

1=not at all true of me	2=somewhat not true of me	3=neutral	4=somewhat true of me	5=very true of me

		Not at all true of me		Neutral		Very true of me
5.	I'm certain I can figure out how to do the most difficult class work in my language arts class.	1	2	3	4	5
6.	One of my goals in language arts class is to avoid looking like I have trouble doing the work.	1	2	3	4	5
7.	I put more effort into my language arts class than I do in my other classes.	1	2	3	4	5
8.	It is important to me that I get an 'A' on almost every test.	1	2	3	4	5
9.	I get distracted very easily when I'm studying for my language arts class.	1	2	3	4	5
10.	It is important to me that I be one of the best students in my classes.	1	2	3	4	5
11.	I often begin my language arts assignments but give up before I am done.	1	2	3	4	5
12.	I can do almost all the work in my language arts class if I don't give up.	1	2	3	4	5
13.	In my language arts class, I always put a lot of effort into doing my work.	1	2	3	4	5
14.	I am often concerned that I may not learn all that there is to learn in my language arts class.	1	2	3	4	5
15.	I frequently put off getting started on the readings and assignments for my language arts class.	1	2	3	4	5
16.	It's important to me that I don't look stupid in my language arts class.	1	2	3	4	5
17.	I delay studying for my language arts class, even when it is important.	1	2	3	4	5
18.	One of my goals is to master a lot of new skills in my language arts class this year.	1	2	3	4	5
19.	It is important to me that I do well in school.	1	2	3	4	5
20.	I postpone doing work for my language arts class until the last minute.	1	2	3	4	5
21.	It's important to me that I thoroughly understand my language arts class work.	1	2	3	4	5

Please continue on next page.

1=not at all true of me	2=somewhat not true of me	3=neutral	4=somewhat true of me	5=very true of me

		Not at all true of me		Neutral		Very true of me
22.	Even if the work is hard in my language arts class, I can learn it.	1	2	3	4	5
23.	I get started on doing my work for language arts but often don't stick with it for very long.	1	2	3	4	5
24.	I'm certain I can master the skills taught in my language arts class this year.	1	2	3	4	5
25.	It's important to me that my teacher doesn't think that I know less than others in my language arts class.	1	2	3	4	5
26.	I promise myself I will do something for my language arts class, then put it off anyway.	1	2	3	4	5
27.	It is important to me that I go to college after high school	1	2	3	4	5
28.	It's important to me that I look smart compared to others in my language arts class.	1	2	3	4	5
29.	One of my goals in my language arts class is to learn as much as I can.	1	2	3	4	5
30.	It's important to me that other students in my language arts class think I am good at my class work.	1	2	3	4	5
31.	I don't put a lot of effort into finishing my work for my language arts class.	1	2	3	4	5
32.	Even if my language arts work is dull or boring, I keep at it until I am finished.	1	2	3	4	5
33.	It is important to me that I get good grades.	1	2	3	4	5
34.	It's important to me that I improve my skills this year in my language arts class.	1	2	3	4	5
35.	One of my goals is to show others that I'm good at my class work in language arts class.	1	2	3	4	5
36.	I can do even the hardest work in my language arts class if I try.	1	2	3	4	5
37.	One of my goals is to keep others from thinking I'm not smart in my language arts class.	1	2	3	4	5

Please continue on next page.

1=not at all true of me	2=somewhat not true of me	3=neutral	4=somewhat true of me	5=very true of me

		Not at all true of me		Neutral		Very true of me
38.	I often find excuses for not starting the work for my language arts class.	1	2	3	4	5
39.	It's important to me that I learn a lot of new concepts in my language arts class this year.	1	2	3	4	5
40.	One of my goals is to show others that my language arts class work is easy for me.	1	2	3	4	5
41.	I worry that I may not learn all that I possibly could in my language arts class.	1	2	3	4	5
42.	It makes me stressed when I think that I might not learn all I need to learn in my language arts class.	1	2	3	4	5

Please continue on next page.

New instructions:

Please indicate how these statements are reflective of you at this school by circling the number that best describes what you think:

1=not at all true	**2=somewhat not true**	**3=neutral**	**4= somewhat true**	**5=completely true**

		Not at all true		Neutral		Completely True
43.	Most teachers at (name of school) are interested in me.	1	2	3	4	5
44.	People here know I can do good work.	1	2	3	4	5
45.	I am included in lots of activities at (name of school).	1	2	3	4	5
46.	Sometimes I feel as if I don't belong here.	1	2	3	4	5
47.	I wish I were in a different school.	1	2	3	4	5
48.	I am treated with as much respect as other students.	1	2	3	4	5
49.	I feel like a real part of (name of school).	1	2	3	4	5
50.	There's at least one teacher or other adult in this school I can talk to if I have a problem.	1	2	3	4	5
51.	I feel proud of belonging to (name of school).	1	2	3	4	5
52.	I feel very different from most other students here.	1	2	3	4	5
53.	People here notice when I'm good at something.	1	2	3	4	5
54.	People at this school are friendly to me.	1	2	3	4	5
55.	Other students here like me the way I am.	1	2	3	4	5
56.	I can really be myself at this school.	1	2	3	4	5
57.	It is hard for people like me to be accepted here.	1	2	3	4	5
58.	Teachers here are not interested in people like me.	1	2	3	4	5
59.	The teachers here respect me.	1	2	3	4	5
60.	Other students in this school take my opinions seriously.	1	2	3	4	5

Please continue on next page.

New instructions:

In this country, people come from many different countries and cultures, and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Hispanic or Latino, Black or African American, Asian American, Native American or American Indian, Mexican American, and Caucasian or White. Additionally, there are many individuals who are of mixed ethnic groups. Some examples may include Chinese and White, Black and White, Chinese and Hispanic, and Korean and Black. The following questions are about your ethnicity or your ethnic group(s) and how you feel about it or react to it.

61. Please fill in: In terms of ethnic groups, I consider myself to be: _____.

62. My father's ethnicity is _____.

63. My mother's ethnicity is _____.

Please indicate how much you agree or disagree with each statement.

1 = strongly disagree	2 = somewhat disagree	3 = neutral	4 = somewhat agree	5 = strongly agree

		Strongly disagree		Neutral		Strongly agree
64.	I have spent time trying to find out more about my ethnic group(s), such as its history, tradition, and customs.	1	2	3	4	5
65.	I am active in organizations or social groups that include mostly members of my own ethnic group(s).	1	2	3	4	5
66.	I have a clear sense of my ethnic background(s) and what it means to me.	1	2	3	4	5
67.	I think a lot about how my life will be affected by my ethnic group membership(s).	1	2	3	4	5
68.	I am happy that I am a member of the group(s) I belong to.	1	2	3	4	5
69.	I have a strong sense of belonging to my own ethnic group(s).	1	2	3	4	5
70.	I understand pretty well what my ethnic group membership(s) means to me.	1	2	3	4	5
71.	To learn more about my ethnic background(s), I have often talked to other people about my ethnic group(s).	1	2	3	4	5
72.	I have a lot of pride in my ethnic group(s) and its accomplishments.	1	2	3	4	5
73.	I participate in cultural practices of my own group(s), such as special food, music, or customs.	1	2	3	4	5
74.	I feel a strong attachment towards my own ethnic group(s).	1	2	3	4	5
75.	I feel good about my cultural or ethnic background(s).	1	2	3	4	5

END OF SURVEY! Thank you for participating in this project!