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CLASSROOM BELONGING, SELF-EFFICACY, AND PERCEIVED
INSTRUMENTALITY: INFLUENCES ON ACADEMIC ENGAGEMENT AND
ACHIEVEMENT

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INSTRUMENTALITY: INFLUENCES ON ACADEMIC ENGAGEMENT AND
ACHIEVEMENT

A Dissertation APPROVED FOR THE
DEPARTMENT OF
EDUCATIONAL PSYCHOLOGY

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ABSTRACT

The goal of the present study is to examine student perceptions of belonging, self-efficacy, and perceived instrumentality in terms of their unique and collective contribution to understanding student reported mastery goals, meaningful cognitive engagement strategies and achievement. Two hundred and forty nine secondary students ranging in age from 14 to 19 years old from three high schools participated in the present study.

Self-efficacy, perceived instrumentality, belonging, achievement goals, cognitive engagement strategies, and enjoyment were measured using five questionnaires distributed and completed in the participant's English class. Achievement was defined as the percentage grade that each student earned at the conclusion of the spring semester. Correlations, regressions, and path models were used to analyze the data.

Results indicated that there was a correlational relationship between belonging, self-efficacy, and perceived instrumentality. Belonging also explained additional variance beyond self-efficacy and perceived instrumentality when accounting for mastery goals, but not meaningful cognitive strategy use or achievement. Theoretical implications of the findings are discussed, as are limitations and implications for future research.

Chapter 1

Statement of the Problem

A report published by the National Center of Educational Statistics (NCES, 2000) indicated that the dropout rate in 2000 was approximately 5%. In other words, five out of every 100 students, or approximately 519,000 adolescents between the ages of 15 through 24, withdrew from school without having successfully completed a high school program. While minor fluctuations in the dropout rate have persisted, a withdrawal rate of five percent was reported by the NCES to be representative of the drop out rate throughout the decade of the 1990's (NCES, 2000).

While the premature withdrawal of any student from school is troubling what is perhaps most alarming is the disproportionate number of students from minority and low-income families represented in dropout rate statistics. The NCES (2000) reported that in the year 2000 minority students withdrew from school at a higher percentage than their Caucasian classmates (Hispanic = 7.4%, African American = 6.1%, Caucasian = 4.1%), female students were more likely to drop out of school than were males (5.4% to 4.6%, respectively) and students from low income families withdrew at more than twice the rate of their middle and upper income classmates (10% compared to 5.2% and 1.6%, respectively). It should be noted that while larger percentages of the minority student population are dropping out, Caucasian students account for the largest number of dropouts per year (56.6% of all dropouts are White) (NCES, 2000). Finally, according to the NCES (2000) the South and Midwest regions of the United States had the highest percentage of students withdraw from school (6.2% & 4.4%, respectively) when compared to the Northeast (3.9%) and Western (3.8%) United States.

Although dropout rates in American high schools have declined since 1972, the fact that approximately 500,000 students prematurely withdraw from school on a yearly basis emphasizes the need for researchers to continue the investigation of factors that inhibit or enhance student retention. As such, the purpose of the current study is to build on previous research by adding student perceptions of belonging to a body of existing literature (i.e., self-efficacy and perceived instrumentality) that has consistently demonstrated a positive relationship with student engagement and achievement.

Although each of the variables to be addressed has been supported in literature (Bandura, 1986, 1994, 1997; Pajares & Miller, 1994; Zimmerman & Bandura, 1994; Eccles & Wigfield, 1995; Miller & Brickman, 2004; Wigfield & Eccles, 2002) it is the combination of the variables in the current study that provides the unique contribution to our understanding of student motivation and achievement. Given the potentially severe consequences of withdrawing from high school without a diploma in the 21st century marketplace, it seems especially relevant to examine a combination of factors that can influence student retention and performance.

The purpose of the present study is to examine a set of social-cognitive variables that have been supported as predictors of achievement and add to that arrangement a variable measuring a student's perception of belonging within a particular academic setting. In the remainder of Chapter One I will summarize the research for each of the aforementioned constructs and try to demonstrate the need to synthesize them to more fully understand their collective impact. I will begin the literature review by summarizing the implications and limitations of risk factor research, which has been, perhaps, one of the most common perspectives used to explain maladaptive behavior

patterns in adolescents over the last thirty years (Hawkins, Catalano, & Miller, 1992). This will be followed by an examination of research pertaining to student identification with academics, which is a construct that has emerged over the last decade and incorporates student perception of belonging into its conceptual framework. Next, I will address self-determination theory and describe the ways in which it will serve as the theoretical framework for the present study. That section will be followed by a review of the theoretical foundations of belonging, self-efficacy, and perceived instrumentality research, the constructs serving as the predictor variables in the current study. I will then address research pertaining to the adoption of achievement goals and cognitive engagement strategies which are two constructs that research suggests have a direct impact on subsequent measures of achievement. Finally, I will summarize the overall empirical findings and introduce my research questions. In Chapter Two I will present the methodology including a description of the participants, procedures, and instruments used in this study. Chapter Three will contain the statistical analysis and results while Chapter Four will discuss the findings, address limitations, and provide a series of implications for future research.

Findings and Implications from Risk Factor and Identification with Academics Research

Although the negative impact that dropping out of school can have on an individual's economic and social future cannot be overstated, risk-factor research (e.g., Hawkins et al., 1992) has demonstrated that dropping out of school also has implications for the larger society. More specifically, Hawkins et al. (1992) reported that poor school adjustment, a low degree of commitment to achieving academic goals, and the belief that academic coursework is irrelevant to one's future have all been correlated with students

electing to engage in drug and alcohol use. On the other hand, student commitment and appreciation for academics has been found to have an inverse relationship to a host of delinquent behaviors (Hawkins et al., 1992). What is more troubling, however, is that risk factor research has typically found factors such as race, gender and socio-economic status largely culpable for underperformance and withdrawal from school (Irvine, 1999; Miller, 1995; Rumberger & Thomas, 2000). Unfortunately, if the goal of research is to improve student retention and performance, the risk factor models leave few avenues for improvement, as most risk factors exist outside the direct, or indirect, influence of educators.

While acknowledging performance and achievement gaps between minority students and their Caucasian classmates, Byrnes (2003) suggested that it is not factors such as race and gender that directly impact academic success or failure, but the internalized perceptions of students that directly influence retention and engagement in academic related activities. Using a large nationwide sample, Byrnes (2003) found that when students perceived genuine opportunities to be successful, were motivated to engage in those opportunities, and had the necessary level of skill, factors such as student race and gender explained little to no variance on tests of achievement. The implication of Byrnes' (2003) findings is that while there are statistical differences between groups relative to academic performance, the source of those differences is more likely the perceptions held by the members of the group, not inherited ability. Consequently, Byrnes (2003) argued that interventions and/or explanations of differential engagement and achievement that focus on immalleable risk factors such as a child's socioeconomic status, race, or gender will not serve the purpose of identifying and serving children in

need. Conversely, interventions and theories that are based on malleable cognitive and motivational factors will hold the potential to positively impact student achievement and performance.

One promising, yet theoretically undeveloped, motivation construct is identification with academics (Osborne, 1997; Smith & White, 2001; Voelkl, 1996, 1997). The concept of identification has been used in various fields to denote an “affinity” or an attachment to a specific person, place, thing or idea (Voelkl, 1997, p. 295). For example, a person can identify themselves with their place of origin or culture and, as a result, adopt personality characteristics that correspond to that culture or area of the world (Markus & Kitayama, 1991). In other ways a person may identify themselves with the teaching or accomplishments of a specific person or organization they deem successful and/or important (Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976). In yet another way, a person may choose to identify himself or herself “with a place [school] or activity structure that may represent certain expectations, values, beliefs, and practices” (Voelkl, 1997, p. 295). Therefore, in its broadest terms, identification is the extent to which a person has incorporated a specific domain (school, athletics, job, family) into his or her existing self description (Voelkl, 1997).

Voelkl (1997) defined academic identification as the bonding and/or attachment a student derives from his/her experience in the academic environment and argued that academic success is enhanced when students *value* academic content and have a sense of *belonging* while at school. Although questions remain about the consistency between theory and measurement in the identification research, a body of related research supports both belonging and valuing as being strong predictors of academic engagement and

achievement (Elliot & Voss, 1974; Finn, 1989; Goodenow, 1993; Goodenow & Grady, 1993; Wehlage et al., 1989;).

I believe an important implication of Voelkl's theoretical conceptualization of identification is the incorporation of an *affective* variable (i.e., perceptions of belonging) into the discussion of academic engagement and performance. The addition of an affective component is notable since the tendency in research on motivation has traditionally been to focus on the cognitive aspects of student motivation and the subsequent impact that those cognitive evaluations have on student engagement and achievement (e.g., Maehr, 1984). Although social-cognitive variables do represent powerful predictors of student engagement and achievement, I believe that Voelkl's work suggests the need for a shift towards a synthesis of cognitive-motivational variables and affective components of academic motivation. Given the work of Voelkl (1996, 1997) and others (Anderman, 1999; Finn, 1989; Goodenow, 1993; Wehlage et al., 1989), belonging is a promising and theoretically strong candidate to include in such a synthesis.

Theoretical and Empirical Rationale for Including Student Perception of Belonging into Motivation Research

While educational and psychological research empirically supports the inclusion of belonging into the broad discussion of student behavior and motivation (Baumeister & Leary, 1995; Osterman, 2000), a theoretical framework also exists which will be used as a foundation for the present study. Within the framework of self-determination theory (SDT), (Ryan & Deci, 2000), the need for relatedness, the need for competence, and the need for autonomy are three primary factors that directly influence and facilitate individual motivation and behavior. These three basic needs are considered to be innate

and universal conditions for personal growth and well-being (Ryan & Deci, 2000). Therefore, within the context of academics, SDT would posit that those students who perceive the school environment as promoting a sense of relatedness, competency and autonomy would more likely experience intrinsic motivation when compared to classmates who perceive their environment as non-supporting (for a discussion involving the positive impacts of intrinsic motivation see Ryan & Deci, 2000 & Deci & Ryan, 2000).

In the present study, the combination of factors being used to predict academic engagement and achievement (belonging, self-efficacy, and perceived instrumentality) is grounded within the theoretical framework of SDT. For example, belonging, which captures a person's need for relatedness, is an aspect of Deci and Ryan's SDT that is viewed as one of the basic needs leading to intrinsically motivated behavior. Similarly, engaging in coursework that one deems instrumental to the attainment of an individually chosen goal, along with self-efficacy, captures the needs for both autonomy and competence.

Furthermore, I argue that the perception of belonging in a domain, along with perceptions of self-efficacy and perceived instrumentality, may be a prerequisite to the development of personally valued future goals (Miller & Brickman, 2004). Such goals would be self-determined, implying some sense of belonging/identification. Miller and Brickman (2004) argued that these self-determined, personally valued future goals are prerequisite to mastery goals, which in turn influence self-regulation, strategy use and achievement.

In summary, with SDT serving as the theoretical foundation, the present study examines a confluence of variables from different lines of research with the goal being to extend our understanding of how and to what degree the present set of variables interact to influence student engagement and achievement. The following sections will present empirical findings associated with belonging, self-efficacy and perceived instrumentality and be followed by discussions regarding the dependent variables being examined in this study.

Empirical support for the inclusion of belonging in the present study. Empirical investigation of the affective and subsequent behavioral response to a personal perception of belonging is not new within the fields of social, developmental, personality, and educational psychology (Baumeister & Leary, 1995, Osterman, 2000). Maslow (1968) argued that only food and shelter took precedence over the need for love and belonging, while attachment theories have long held that taking part in a mutually beneficial relationship plays a vital role in personal growth and development (Bowlby, 1969, 1973). Furthermore, theorists and researchers such as Horney (1945), Fromm (1956), and Epstein (1992) have all articulated the significance of perceiving oneself to be a valued member of a wider group. Although the need to belong is likely to be pervasive throughout a person's life, research suggests that during the period of adolescence the need to connect with others via mutually supportive relationships is at its peak (Midgley, Feldlaufer, & Eccles, 1989). Therefore, even though research regarding belonging has an established place within the wider field of psychology, it seems especially germane to the study of adolescent behavior and achievement within the context of academics.

Research has indicated that schools have the ability to provide adolescents with opportunities to experience mastery and belonging while interacting with supportive, non-parental adults (Roeser, Midgley, & Urdan, 1996). Research also suggests that schools can meet these needs while simultaneously developing the level of academic knowledge and understanding of their students (Midgley, Anderman, & Hicks, 1995). Unfortunately, during the crucial developmental period of adolescence, schools have been found to emphasize social comparisons of ability (Midgley, Anderman, & Hicks, 1995), while deemphasizing the relational quality between teachers and students (Midgley, Feldlaufer, & Eccles, 1989), thus potentially limiting the overall positive role school can play in the lives of students (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & MacIver, 1993). Studies have indicated that the net results of this narrowly focused academic framework are declines in academic motivation and engagement in academically adaptive behaviors throughout adolescence (Eccles et al., 1993; Harter, Whitesell, & Kowalski, 1992). As a result, Hargreaves, Earl and Ryan (1996) stated that, “one of the most fundamental reforms needed in secondary and high school education is to make schools into better communities of caring and support for young people” (p.77).

Turner et al. (2002) argued that classroom teachers construct (either implicitly or explicitly) learning environments in one of two ways. If the focus of a classroom environment is on competition and comparative interpretations of ability a “performance goal structure” will emerge often resulting in hesitancy by students to ask for needed assistance and then purposefully avoiding “strategies that might enhance their understanding and achievement” (p. 89). This avoidance behavior may be due to performance enhancing strategies (i.e., asking for help, trying hard, and approaching their

work in novel ways) requiring an investment of time and energy in an academic domain. Such strategies are unlikely to occur if the student perceives that domain to be undesirable. Subsequently, if a student fails during their initial attempts to attain mastery within a performance oriented environment, negative appraisals of ability could be supported or evoked and result in a decrease in motivation and efficacy (Turner et al., 2002, p. 89). Conversely, Turner et al. (2002) also addressed environments that focus on “learning, understanding, and intellectual development” in which “mastery goal structures” emerge (p. 89). Within these mastery or learning oriented classrooms students are more likely to adopt matching learning or mastery goals (Roeser et al., 1996) and, by perceiving the environment as supportive, be less likely to employ avoidance behaviors or appraise the environment as threatening (Boekaerts, 1993).

The implication of Turner et al.’s (2002) findings is that student interpretation of the environment directly impacts the type of achievement goals adopted by students and, as a result, serves to facilitate or hinder academic engagement and achievement (Roeser, Midgley, & Urdan, 1996; Turner et al., 2002). Furthermore, Turner et al. (2002) argued that teachers who are interested in constructing or promoting a mastery oriented learning environment must attend “to the positive relationships that teachers develop with students,” thereby synthesizing “the cognitive and affective components of teaching and learning” (p. 104). As a result, Turner et al.’s (2002) findings and overall thesis emphasize the utility of examining both the social-cognitive and the affective components of motivation manifested within a learning environment.

Meece (1991) also examined classrooms emphasizing either mastery or performance goals and found several commonalties among classrooms characterized as

having a high mastery orientation. More specifically, mastery oriented classrooms were found to include instructional practices that emphasized the meaningfulness of learning and deemphasized comparisons of ability. Furthermore, Meece (1991) characterized a mastery oriented classroom as one where emphasis is placed on determining and then orienting instruction to meet the developmental needs of the students. Again, as in the Turner et al. (2002) article, Meece (1991) emphasized the blend of affective, as well as, social-cognitive components in fostering learning.

Goodenow (1993) argued that “the social context of special relevance to education is students sense of belonging” (p. 80). From the standpoint of identification research, Goodenow’s (1993) use of the term “social context” is analogous to Erikson’s notion of the social reality within which individuals choose to operate. In other words, implicit in Erikson’s notion of a chosen social role is the individual perception of belonging, since it would make little sense to purposefully select a social reality in which we felt rejected or unwanted. The previous assertion is supported by Goodenow’s (1993) argument that a personal sense of belonging is attained through mutually beneficial social relationships between a student and his/her classmates and teachers.

Goodenow (1993) specifically defined belonging as “the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment” (p. 80) and uses the term “belonging” synonymously with the term “psychological membership.” Other authors have defined belonging in a similar manner. Voelkl (1996) defined school belonging as an internalized perception that “one is an important part of the school environment” (p. 296). Finn (1989) conceptualized belonging as a student’s perception of there being mutually beneficial relationships

within a school. Finn (1989) found that, when a sense of belonging was absent, students were likely to have a higher rate of truancy, disruptive behavior, and dropping out.

Traditionally, the concept of belonging has been rooted in research on student resiliency and has been examined under such headings as “relatedness” (Deci & Ryan, 1985) or a student’s sense of “community” (Battistich, Solomon, Kim, Watson, & Schaps, 1995; Osterman, 2000; Solomon, Watson, Battistich, Schaps, & DeLucci, 1996) and within the context of a school’s “psychological environment” (Roeser, Midgley, & Urden, 1996), “school ethos” (Rutter, 1983), “school culture” (Maehr, 1991), “school warmth” (Voelkl, 1996) and “school climate” (Anderson, 1982). As stated earlier, student perception of a supportive environment has been found to be especially relevant during adolescence when, as Goodenow (1993) states, “young people begin to consider seriously who they are and wish to be, with whom they belong, and where they intend to invest their energies and stake their futures” (p. 81).

Perceptions of belonging, fostered by the recognition of supportive relationships in either a home or school setting, has been found to impact various groups within varying contexts. In her seminal work on resilience, Werner (1986) studied the benefits of fostering a sense of belonging using a sample of students on the Hawaiian Island of Kauai. Specifically, Werner (1986) found that those students who exhibited resilient behaviors in school typically came from supportive homes, took part in extra curricular activities, had one or more friends that they characterized as “close,” and were able to name a favorite teacher (p. 505). Perhaps more telling was the finding that students who failed to perceive the environment (either home or at school) as supportive were more likely to become delinquents and engage in criminal acts or other antisocial activities.

Research by Goodenow (1993) and Werner (1986) emphasize the shift from a focus on the construction of a supportive environment to a focus on a student's perception of belonging. The implication is that while environments may be constructed under the auspices of a supportive framework, a sense of belonging ultimately depends upon the student perception of that environment (Anderman, Maehr, & Midgley, 1999). It stands to reason that while environments may be created with the best of intentions, the utility of those environments may be undermined by a lack of understanding, on the part of teachers, as to the unique needs of their students. For example, by focusing on competition and comparisons of ability rather than fostering a sense of membership and making explicit the current relevance and future utility of the content, a teacher might assume that this competitive environment will compel students to achieve. However, research would suggest that the performance orientation of that environment is more likely to inhibit optimal learning (Anderman, 1999; Anderman, Maehr, & Midgley, 1999; Ryan & Patrick, 2001). This is not to imply that research that focuses on academic environments is unwarranted, but merely to emphasize the necessity of examining student perceptions of those environments.

Garmezy (1991) has noted that student perceptions of supportive relationships (in various manifestations) are primary protective factors in schools and the wider community. A protective factor, as defined by Garmezy (1991), included any factor that mediated or suppressed negative effects that could be associated with poverty or other factors associated with being characterized as an at-risk student. Specifically, Garmezy (1991) argued that the perception of a warm and cohesive family unit (i.e., a family unit

that fosters and maintains the perception of belonging among its members) was the primary predictor of resiliency in adolescence.

Finally, Eccles et al. (1993) discussed belonging in terms of it contributing to an overall fit between a person and his/her environment. In other words, the greater the fit between a student's need (for belonging in this case) and the opportunities presented by an environment the greater the likelihood of a resilient student choosing to engage in academically productive activities. However, Eccles et al. (1993) reported that students have fewer favorable interpersonal relationships with their teachers after the transition from grade school to secondary school. As such, if the perception of supportive relationships is absent (i.e., absent a sense of belonging) the environment no longer fits nor meets the personal needs of students and the result is a less resilient student.

Studies have also found in both grade school (Batcher, 1981) and college settings (Tinto, 1987) that when a lack of belonging or sense of membership persists, negative outcomes (i.e., lack of persistence and commitment) result. Research by Trusty and Dooley-Dickey (1993) found that when students reported a sense of alienation towards school, their grades in reading and math were negatively impacted. Furthermore, Wentzel and Asher (1995) reported that children categorized as rejected or controversial were more likely to break school rules. This work suggests that when an environment is perceived to be uninviting and/or nonsupportive, students are likely to distance themselves either psychologically, physically, or both, from that environment. On the other hand, when an environment is perceived to be inclusive and/or accepting a person is likely to behave prosocially and engage in the activities presented within that

environment (Solomon, et al., 1996; Solomon, Battistich, Watson, Schaps, & Lewis, 2000).

The argument that a person's perception of a domain will have a direct impact on performance and achievement in that domain has been further supported by Eccles et al. (1993) who noted that belonging, enhanced by the presence of a caring teacher, increased student motivation to perform academically. Eccles et al. (1993) stated, "the quality of the student-teacher relationship is associated with students' academic motivation and attitudes toward school" (pg. 95). More specifically, those students who transitioned from a low-care environment to a perceived high-care environment not only increased their performance in math but also, and perhaps more importantly, increased their perceived valuing of mathematics. Unfortunately, the researchers went on to state that this transition from a low to high care environment is typically the exception and not the rule. Consequently, an environment marked by a shift from high to low care was noted to be the most likely scenario for students transitioning from grade school to a secondary school. Furthermore, Solomon et al. (1996) reported a significant relationship between a student's perception of their school as a community and higher levels of intrinsic motivation. Connell and Wellborn (1991) found that student perception of belonging was significantly related to subsequent engagement behaviors. Finally, Sletta, Valas, and Skaalvik (1996) reported that student perception of peer support was linked to perceptions of social competence and interest in academics.

Perceptions of school as a high care environment has been found to not only positively impact proximal academic performance but, when absent, be linked to student involvement in problem behaviors such as skipping school, drug and alcohol use,

property damage, and stealing. Battistich and Hom (1997) used a sample of over 1400 fifth and sixth graders from 24 elementary schools across the United States and defined a “functional community” as one that included both caring and supportive relationships and opportunities (p. 1997). Interestingly, Battistich and Hom (1997) found that poverty level (a common risk factor) was unrelated to problem behaviors, including but not limited to drug use and delinquency. On the other hand, when students’ sense of their school as a community was examined, it was found that those students who reported a higher sense of community exhibited lower levels of drug use and delinquency when compared to those students who reported a marginal sense of community. These findings supported the Eccles et al. (1993) research discussed earlier in which an emphasis was placed on the perceived fit between the needs of students and their environment.

Although a body of research exists that suggests a link between belonging and academic engagement and performance, limitations in the research hinder the generalizability of the findings across the broad spectrum of high school students. For instance, the focus of belonging research has traditionally been on students classified as “at-risk” (Finn, 1989; Goodenow, 1993; Goodenow & Grady, 1993; Wehlage et al., 1989; Wehlage, Rutter, Smith, Lesko, & Fernandez, 1990). Although this line of research certainly warrants attention, by limiting the focus to “at-risk” students (as defined by Hawkins, Catalano, & Miller, 1992) an unintended consequence may be the lack of generalizability of the findings. As a result, recent studies have begun to explore the relationship between belonging and outcome achievement measures within more traditional school environments (Anderman, 1999; Roeser, Midgley, & Urdan, 1996). This shift is important for several reasons. For one, the decrease in academic motivation,

which often occurs during the transition from grade school to middle school, has been found to occur across a wide range of students, irrespective of their “at-risk” status (Eccles & Midgley, 1989; Eccles, et al., 1993; Harter et al., 1992). Furthermore, as school reforms impact every student within a particular school district, research that samples broadly (i.e., rich/poor, minority/Caucasian, male/female) would seem particularly meaningful.

Another limitation in the research is that belonging has received limited attention at the classroom level. In other words, research on belonging has typically been limited to investigations on “academic belonging” (i.e., does a student hold a sense of membership to the overall school?). It is possible, however, that a student may have a sense of overall academic belonging but a marginal, low, or nonexistent sense of belonging in a specific class. As a result, a broad view of belonging may fail to explain a lack of engagement behaviors in context specific cases (i.e., a specific classroom). Furthermore, researchers who focus on constructs related to academic engagement and achievement have often emphasized the importance of context specific examinations. For example, Bandura (1977) argued that “expectations” or efficacy beliefs that are measured “globally” may “have little relation to magnitude change” within a specific context (p. 192). Roeser, Midgley, and Urdan (1996) also suggest that the majority of academic goal research has been oriented toward the classroom. As such, when measuring the relationship between belonging, achievement goals and self-efficacy it would seem inconsistent with the goals of the present study to measure self-efficacy and goal orientation at the classroom level yet examine belonging at the larger school level.

A further limitation with the literature on belonging is that little research has yet examined the relationships that exist between perceptions of belonging and the use of meaningful or shallow cognitive processing strategies and/or the adoption of performance or mastery goals. Finally, no research has clearly demonstrated that measuring student perceptions of belonging will add to the prediction of achievement-related behaviors over and above social-cognitive variables commonly associated with academic success (i.e., perceived instrumentality and self-efficacy). Since student retention and positive academic performance are clearly a high priority, it is important to establish not only the relationship between social-cognitive and affective variables but also the predictive quality of affective variables (i.e., a student's perception of belonging) within a particular classroom setting.

In summary, the perception of belonging, as fostered by the recognition of a supportive environment, has been found to positively impact engagement and achievement within school, community and institutional settings. Osterman (2000) stated that:

When children experience positive involvement with others, they are more likely to demonstrate intrinsic motivation, to accept the authority of others while at the same time establishing a stronger sense of identity, experiencing their own sense of autonomy, and accepting responsibility to regulate their own behavior in the classroom consistent with social norms.

(p.331)

As indicated in the above passage, learning and resiliency do not occur in isolation, instead learning is a complex process that must take into account the primary and central role of personal interactions and the perceptions which stem from those interactions.

Theory and Research on the Impact of Self-Efficacy and Perceived Instrumentality on Academic Engagement and Achievement

In addition to the evidence supporting the impact of mastery goals and cognitive strategy use on student engagement and achievement, there is also evidence that self-efficacy and perceived instrumentality are two additional variables that are key to understanding the motivation of high school students. Studies have reported that self-efficacy (Bandura, 1986, 1994, 1997; Greene, Miller, Crowson, Duke & Akey, 2004) and perceived instrumentality (Greene et al., 2004; Miller & Brickman, 2004) have consistently been correlated to the adoption of mastery goals, the use of meaningful cognitive engagement strategies and achievement. Research pertaining to self-efficacy and perceived instrumentality will be presented in this section.

Theory and research involving self-efficacy. Self-efficacy is the extent to which an individual perceives that he or she possesses the ability necessary to “manage” a given set of circumstances (Bandura, 1994). If a person believes that he/she does, in fact, possess the capabilities required to successfully complete a given task, that person is said to have high self-efficacy for that task. However, if a person perceives that he/she does not possess the necessary capabilities to complete a task then that person would be said to have low self-efficacy.

Self-efficacy researchers have debated the level of content specificity at which self-efficacy is an effective measure. For instance, Bandura (1997) as well as Pajares

(1997) warned against “generalized” self-efficacy measures in the sense that self-efficacy is not a generalizable condition. Instead, self-efficacy is more task specific in contrast to the self-concept of ability which Pajares (1997) argues is more suited for generalized measures. For example, for someone to measure a person’s self efficacy in regards to mathematics they may ask, “are you confident that you can do a specific type of problem?” On the contrary, if a researcher is attempting to understand a person’s self-concept of ability in relation to mathematics they may ask, “do you feel confident in math?”

Pajares (1996) argued that self-efficacy should be measured in relation to specific behaviors, while other researchers (Henson, 2002; Lent & Hackett, 1987) have argued that being too specific may render self-efficacy an “atomistic” construct. The implication being, the more specific the self-efficacy measure is (i.e., are you confident that you can do this specific problem) the level of practicality or generalizability will consequently diminish. In other words, if a student expresses low self-efficacy about problem #7 on page 350 of their geometry textbook that may reveal relatively little about his/her overall appraisal of personal abilities in the domain of mathematics (or geometry for that matter).

Bandura (1997) has argued that “the level of generality of the efficacy items within a given domain of functioning varies depending on the degree of situational resemblance and foreseeability of task demands” (pg. 13). In other words, self-efficacy must be measured within a context. If the context demands specificity then self-efficacy items should mirror the appropriate level of specificity. For the purposes of the present study, self-efficacy will be measured in terms of student perceptions regarding a specific class.

Research has demonstrated that students with high self-efficacy are more likely to seek challenges, persist in the face of those challenges and adopt effective strategies to mediate those challenges when compared to their classmates with low self-efficacy (Bandura, 1994; Eccles, Wigfield, & Schieffele, 1998; Schunk, 1989; Zeldin & Pajares, 2000). Furthermore, there has been a great deal of research that has investigated the link between the self-efficacy of a student and the resulting use of learning strategies (e.g., Greene & Miller, 1996; Pintrich & DeGroot, 1990). The implication is that if a student believes that he or she is capable of performing a given task, that student will be more likely to engage in meaningful strategy use, whereas someone who has low efficacy would likely perceive that the investment of time and energy toward a particular task is useless. In essence, why engage in tasks when the perception exists that one is likely to fail or not meet expectations for that task? As expected, links between self-efficacy and achievement have also been found (Pajares & Miller, 1994; Zimmerman & Bandura, 1994). It should also be noted that efficacy beliefs have been found to impact academic performance across various domains such as writing (Schunk & Swartz, 1993), mathematics (Schunk & Cox, 1986), and secondary English (Greene et al., 2004).

Theory and research involving perceived instrumentality. While Bandura (1986) and Schunk (1991) argued that proximal goals were the key to promoting self regulation, other researchers have stressed the “importance of personal future for present motivation and learning” (Markus & Nurius, 1986; Simons, Dewitt, & Lens, 2000, p. 356). In fact, several researchers have suggested that perceiving a current task as instrumental in attaining ones future goals will enhance not only student motivation, but subsequent

performance (Eccles & Wigfield, 1995; Miller & Brickman, 2004; Miller, et al., 1996; Wigfield & Eccles, 2002).

Research on perceived instrumentality is directed toward understanding the role that a future orientation plays relative to current performance. The adoption of a future oriented perspective is important for several reasons. Primarily, as Miller and Brickman (2004) suggest, without “future goals and related subgoal systems, human behavior would be guided only by immediate needs and immediate consequences” (p. 12). In other words, without some future orientation, the importance and relevance attached to current tasks would be limited to their short-term appeal. However, once a distal goal is established, relevant proximal subgoals will likely be established and perceived as instrumental. Furthermore, if students appraise themselves as capable of successfully accomplishing those subgoals, there will be a greater likelihood that the student will be self-regulated and motivated to perform a specified or chosen task (Greene, DeBacker, Ravindran, & Krows, 1999; Miller, DeBacker, & Greene, 1999).

Recently researchers have begun to empirically examine the hypothesized link between the perception of a task being instrumental to one’s future and the adoption of mastery goals (Greene, et al., 2004). According to Miller and Brickman (2004), the theoretical prediction is that students are “unlikely to pursue learning goals in contexts where the learning tasks are thought to be unrelated to attaining future goals” (p. 16). In order to examine this prediction empirically, Greene et al. (2004), using a sample of 220 high school students from a Midwest suburban high school, tested a causal model with perceived instrumentality predicting student adoption of mastery goals. Their findings supported and extended previous studies that had reported moderate to strong

correlational evidence to support the link between perceived instrumentality and the adoption of mastery goals (DeBacker & Nelson, 1999; Greene, et al., 1999; Miller, et al., 1999; Miller et al., 1996). As such, students will be less likely to adopt mastery goals for a given context when there is no perceived link between tasks and a future increase in competence or mastery. This contention was supported by Dweck and Leggett (1988) and Nicholls (1989) who also argued that the perception of a task as being unrelated to future mastery or competence will decrease the likelihood of a student adopting mastery goals for that task.

In addition to predicting the adoption of mastery goals, Greene et al. (2004) demonstrated a correlational and predictive relationship between perceived instrumentality and the adoption of meaningful strategy use (i.e., engaging in meaningful cognitive strategies to learn relevant tasks). Greene et al.'s (2004) findings support and extend previous work by Miller et al. (1996) who found that when students in a high school math class perceived their performance to be relevant to attaining future goals they were more likely to engage in study strategies that involved deep and meaningful processing of information. Finally, Miller and Brickman (2004) discuss the findings of two of their previous studies (Brickman & Miller, 1998; Brickman & Miller, 2001) in which they found both quantitative and qualitative evidence for the link between perceived instrumentality and the incentive to engage in meaningful processing of information. The implication is that as the perceived instrumentality of a task increases, the likelihood of a student putting forth the cognitive effort necessary to master that task will increase as well.

Just as the perceived instrumentality of a task has been found to be correlated with the adoption of mastery goals and the use of meaningful cognitive engagement strategies, a relationship has also been found between student perceptions of task instrumentality and course achievement. Miller et al. (1996) found that student perceptions of instrumentality were positively related to achievement in math while Greene et al. (2004) found a positive relationship between perceived instrumentality and student's grade in English. Perhaps as importantly, Miller et al. (1996) found perceived instrumentality to be positively related to persistence and effort. These findings support earlier research by Raynor (1970, 1974), DeVolder and Lens (1982) and Markus and Nurius (1986) which stressed the impact that a future frame of reference can have on present engagement and achievement. Furthermore, these findings are consistent with a model of self-regulation (Miller & Brickman, 2004) which proposes that as tasks are deemed instrumental in the attainment of personally valued future goals, the "incentive value" of that task is raised. In other words, the adoption of mastery goals, meaningful cognitive strategy use, and subsequent achievement was predicted, if not directly influenced by, student perceptions of tasks as instrumental to the attainment of future goals.

Research on the Adoption of Mastery Goals and the Use of Meaningful Cognitive Strategies

In the previous section I argued that the perception of belonging is a key motivation variable that should be taken into account when examining academic engagement and achievement. Another motivation variable that has been found to directly impact student performance is the adoption of mastery goals. In fact, some of the

research that I presented as being supportive of the positive benefits of belonging is from a research tradition that highlights the motivational characteristics of mastery goals (Ames, 1992; Ames & Archer, 1988; Meece, 1991; Meece et al., 1988). Research on mastery goals will be summarized in this section, along with some findings for performance goals, followed by theory and research on the role of cognitive engagement in learning.

Definitions and discussion on the differential impacts of achievement goals on learning and achievement. Generally speaking, students who establish goals for a particular class will out-perform students who have not (Locke & Latham, 1990). Wigfield and Eccles (1992) defined achievement goals as the “purposes children have for learning different things” (p. 295). In other words, it is common for people to set goals for themselves and then choose to behave in ways that will allow them to meet those goals (Ames, 1992; Ames & Archer, 1988). Ames (1992; Ames & Archer, 1988) proposed that learners adopt one of two main types of goal orientations: mastery and performance goals. Those who adopt mastery goals focus on “developing new skills, trying to understand their work, improving their level of competence, or achieving a sense of mastery based on self-referenced standards” (Ames, 1992, p. 262). Conversely, students adopting a performance goal approach to learning focus on gaining favor or approval through successful completion of a task (e.g., performance-approach goals) or avoiding negative evaluations of ability (e.g., performance-avoidance goals). Nicholls (1984) proposed similar notions of goal orientation but described performance goals as being ego-involved goals and mastery goals as being task involved goals. Finally, Dweck (1986) used the terms learning and performance to denote the dichotomy between

evaluations of competence based on self-referenced standards (learning goals) and other-referenced standards (performance goals). I will use Ames' (1992) terminology (mastery/performance) because her work, like mine, is focused on classroom-specific motivation.

Research has found that the adoption of mastery goals is positively related to the amount of time a person devotes to learning tasks (Butler, 1987) and student persistence on difficult tasks (Elliott & Dweck, 1988). Students who adopt mastery goals have been found to accept challenging tasks and express a positive attitude toward learning (Ames & Archer, 1988). Furthermore, students adopting mastery goals toward a given task are more likely to employ self-monitoring strategies and meaningful cognitive processing (Ames & Archer, 1988; Greene & Miller, 1996; Meece, Blumenfeld, & Hoyle, 1988). Finally, Graham and Golan (1991) found that individuals who emphasize personal mastery are able to recall relevant material at a higher rate than those focusing on comparisons with others.

Perhaps most importantly, changes in the goal structure of the classroom environment between grade school and junior high school have been found to negatively impact academic performance (Anderman, 1999; Anderman, Maehr, & Midgley, 1999; Anderman & Midgley, 1997). Specifically, teachers who promote a mastery goal orientation in their classroom are likely to encourage a mastery/task goal orientation among their students. Conversely, teachers promoting a performance/ego goal orientation (i.e., a classroom where there is an emphasis on grades and comparisons of ability) will likely foster performance/ego goals among students. An emphasis on ability comparisons has been related to lower levels of mastery goals (Anderman & Young,

1994) and higher levels of self-handicapping (Urdu, Midgley, & Anderman, 1998). Conversely, if the goal orientation of the classroom is one that encourages personal “improvement, effort and learning” the students are likely to adopt task/mastery goals which subsequently boosts the likelihood of pursuing their “academic work for the purposes of personal understanding and increased competence” (p.32).

A question in recent research on achievement goals concerns the actual nature of the distinction between performance-approach and performance-avoidance goals (Elliot, 1999). Elliot (1997,1999) and colleagues (Elliot & Church, 1997; Elliot & Harackiewicz, 1996) have suggested that there are both theoretical and empirical justifications for delineating between performance-approach and performance-avoidance orientations. Elliot (1999) defined performance-approach goals as being norm-referenced evaluations of competence while performance-avoidance goals are norm-referenced evaluations of incompetence. More specifically, a student adopting a performance-approach orientation will likely focus on gaining favor or approval through successful completion of a task while students adopting performance-avoidance goals will focus on avoiding negative evaluations of ability (Day, Radosevich, & Chasteen, 2003). Although not a focus of the present study, both performance orientations are measured and examined.

Mastery goals have been extensively linked to positive academic behaviors such as effort and persistence while studying, the adoption of self-regulated learning strategies, willingness to seek help, the use of meaningful cognitive processing strategies, long-term retention, and intrinsic motivation (Anderman, Griesinger, & Westerfield, 1998; Anderman & Young, 1994; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Miller, Behrens, Greene, & Newman, 1993; Miller, Greene,

Montalvo, Ravindran, & Nichols, 1996; Schraw, Horn, Thorndike-Christ & Bruning, 1995; Wentzel, 1996). Conversely, performance-avoidance goals have been empirically linked to maladaptive academic behaviors and performance such as the use of shallow cognitive processing strategies, minimal long-term retention of information, procrastination, unwillingness to seek help, the use of self-handicapping strategies, high levels of anxiety prior to evaluation, poor performance, and low levels of intrinsic motivation (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, 1999; Elliot & Sheldon, 1997; Middleton & Midgley, 1997; Skaalvik, 1997). Finally, student adoption of performance-approach goals has been shown to be related to both positive and negative academic performance and achievement (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Skaalvik, 1997). For the purposes of the present study, achievement goals are examined using the trichotomous framework (mastery, performance-approach, performance-avoidance) described by Elliot (1999).

Definitions and discussion on the use of meaningful and shallow cognitive engagement strategies. Greene and Miller (1996) defined meaningful cognitive engagement as the use of cognitive strategies that go beyond rote memorization and superficial understanding. Similarly, Craik and Lockhart (1972) argued that it was not simply the rehearsal of information that improved memory but instead it was rehearsal that included connecting new material to one's prior knowledge, summarizing the content and meaning of a particular chapter or section in one's own words and/or the use of a compare/contrast strategy that would improve subsequent recall. In addition, Schunk (1991) argued that students who possess and use meaningful cognitive strategies would

likely use the same strategies in the future as those strategies would not only enhance a student's performance, but also result in an increase in his or her perceptions of ability. Schunk's (1991) argument suggests that meaningful cognitive strategy use can have positive effects on motivation as well as achievement. A substantial body of research has demonstrated that using meaningful cognitive strategies will lead to enhanced performance on achievement measures when compared to material studied utilizing shallow cognitive processing strategies (e.g., Graham & Golan, 1991; Greene & Miller, 1996; Kardash & Amlund, 1991; Miller et al., 1996; Nolen, 1988; Pintrich & Garcia, 1991).

Meaningful strategies have been contrasted with shallow cognitive engagement strategies, which include rote memorization of material and repetition without meaningful elaboration. Craik and Lockhart (1972) argued that while these types of shallow cognitive engagement strategies may increase the length of time that information remains accessible in working memory these strategies often fail to result in "a more permanent memory trace" (p. 676). As a result, if students were to adopt shallow engagement strategies as a method for studying, the ability to recall the relevant material would likely diminish over time. Empirically, Greene and Miller (1996) reported a positive correlation between shallow cognitive engagement strategies and the adoption of performance goals but not learning/mastery goals. Furthermore, Greene and Miller (1996) found that the use of shallow cognitive strategies was negatively related to achievement. Collectively, these findings may indicate that the adoption of performance goals is likely to lead to the use of shallow cognitive engagement strategies and, by

processing information at a shallow level, achievement is likely to be negatively impacted.

Summary and Implications for the Present Study

Research has shown that self-efficacy and perceived instrumentality are positively related to the adoption of mastery goals and the use of meaningful cognitive engagement strategies which, in turn, have been found to be important for successful learning (Bandura, 1994; Eccles, Wigfield, & Schieffele, 1998; Greene & Miller, 1996; Greene et al., 2004; Pintrich & DeGroot, 1990; Schunk, 1989; Zeldin & Pajares, 2000). In addition, research examining student perceptions of belonging have consistently yielded positive correlations between belonging and academic achievement (Finn, 1989; Goodenow, 1993; Goodenow & Grady, 1993; Voelkl, 1996, 1997; Wehlage et al., 1989). However, self-determination theory would suggest that to more adequately account for student motivation and achievement, one must take into account a set of factors that collectively influence student behavior. Therefore, since self-efficacy, belonging, and perceived instrumentality have not yet been examined in combination, the goal of the current study is to examine how this set of variables contributes both individually and collectively to the prediction of mastery goals, cognitive engagement, and performance.

The combination of the aforementioned variables is also important in that this study will attempt to demonstrate the impact that an affective dimension of student motivation can have on the engagement and achievement of high school students. For the purposes of this study, affective variables are understood to be motivational constructs that require a cognitive appraisal of a situation or environment and evoke a primarily emotional response (i.e., a feeling). In other words, a student's perception that

he or she is a valued member of a class will likely evoke positive feelings toward that class. Moreover, Pintrich (2003) suggested that perceptions that give rise to emotions and feelings may serve to “increase or decrease working memory load” or provide “more detailed, analytical, and careful processing of information” (p. 679). However, it could also be argued that positive or negative feelings are valuable yet not sufficient to account for a student’s level of engagement and achievement. For example, being considered a valued member of a class would likely evoke positive feelings or emotions in most students, however student perceptions about the difficulty of an academic course may inhibit engagement-related behaviors. As such, affective variables are viewed as being related to, yet distinct from, constructs that require a cognitive appraisal of a situation or environment and yield a primarily behavioral response (i.e., an increase or decrease in behavior). In other words, perceptions that one is capable of successfully completing an activity will likely yield behavior consistent with that appraisal (persistence in the face of challenge, etc.). This is not to suggest that social-cognitive variables do not result in any emotional reaction or that feelings do not bias behavior. However, it does suggest that while affective and social-cognitive variables may each fall within the broad framework of motivation, each set of factors likely accounts for different facets of a student’s subsequent level of engagement and achievement. Therefore, in the current study, it is the inclusion of belonging that introduces an affective dimension of motivation into the more commonly studied set of social-cognitive variables. While Pintrich (2003) suggested that “it may be time for an affective revolution,” the intention of this study is simply to provide those interested in student performance with a more comprehensive explanation for student behavior.

The present thesis is that measuring student perception of belonging will aid our understanding of student motivation and achievement by including an affective dimension into the prediction of mastery goals, cognitive engagement, and achievement. By testing this thesis, the proposed study stands to advance our understanding of student engagement and achievement in several ways. First, while research has consistently demonstrated a relationship between belonging and academic achievement (Finn, 1989; Garnezy, 1991; Goodenow, 1993; Voelkl, 1996, 1997), the predictive relationship between belonging and mastery goals and the use of cognitive engagement strategies remain unclear. In other words, will belonging add to the prediction of mastery goals and cognitive engagement beyond the variance accounted for by self-efficacy and perceived instrumentality?

Second, this study will extend the Greene et al. (2004) findings that self-efficacy, mastery goals, and perceived instrumentality accounted for approximately one-half of the variance when predicting cognitive strategy use and 22% of the variance in an achievement variable. I expect to find that with the addition of belonging the prediction of cognitive strategy use and achievement will be even stronger. Similarly, this study will provide further empirical support for the correlational and predictive relationship between perceived instrumentality and mastery goals hypothesized by Miller and Brickman (2004) and demonstrated by Greene et al. (2004). As such, the proposed study stands to reinforce the idea that teachers should take the time to evaluate their student's appraisals of the affective climate in the classroom environment since those appraisals are likely to have a direct impact on subsequent engagement behavior and performance (Goodenow, 1993; Turner et al., 2002; Wentzel, 1999).

Research Questions

This study will be guided by three primary research questions. First, what are the relationships among self-efficacy, perceived instrumentality, perceived belonging, mastery goals, performance-approach and performance-avoidance goals, meaningful and shallow cognitive strategy use and achievement? Based on previous findings in self-determination research, I predict that positive correlations will exist between belonging, self-efficacy and perceived instrumentality (Ryan & Grolnick, 1986; Deci, Connell, & Ryan, 1989). In other words, as a student's perception of belonging increases so will their estimate of personal ability and the perceived instrumentality of coursework. Second, will the belonging variable add to the prediction of mastery goals and meaningful cognitive strategy use beyond that provided by self-efficacy and perceived instrumentality? Third, will student perception of belonging add to the prediction of course achievement?

Chapter II

Methodology

The Schools

Data for this study were collected in three high schools, an urban, suburban, and rural high school, in central Oklahoma. According to Oklahoma's Office of Accountability website, in the 2001-2002 school year, the urban high school had a student body that was 52%-Caucasian, 37%-African American, 2%-Asian, 4%-Hispanic, and 5%-Native American. Thirteen percent of the student body was eligible for free and reduced lunch compared to the district average of 42%. Furthermore, both the poverty rate (11%) and the unemployment rate (5%) for the district was at or below the state average (15 % and 5% respectively).

In 2002, single parent families comprised approximately 35% of families in the urban school district, which is above the state average of 29%. Approximately one-quarter of the adults in the district had completed a college degree, while 15% had less than a 12th grade education. In terms of student performance, the average ACT score for the class of 2002 was 20.1 with an ACT participation rate of 51.3%. In other words, with an average class size of slightly over 400 students, the urban high school had only about 200 students complete the ACT by their senior year. In addition, the average grade point average (GPA) of seniors in the class of 2002 was 2.9 on a 4.0 scale. Regarding the teacher and administrator characteristics, in 2002 there were approximately 60 regular classroom teachers of which almost 40% had advanced degrees. Finally, the average years of experience among the teachers was 12.6 years which was slightly lower than the state average of 12.9 years of experience.

The second school from which data were collected was a suburban school in central Oklahoma. Sixty-seven percent of the students enrolled in the suburban high school are Caucasian, 16% are African American, 3% Asian, 9% Hispanic, and 5% Native American. The dropout rate is 9%, which is over twice the state average of 3.9%. Academically, the average GPA for the class of 2002 was 3.0 with approximately 79% of students enrolled in 2002 having taken the ACT. For those taking the ACT, the average score was 21.1 which was .5 points higher than the state average. In terms of the socioeconomic condition of the suburban school's surrounding district, both the poverty rate and the unemployment rate are below the state average while the proportion of single parent families is five percentage points higher than the state average. Finally, over 35% of adults in the school district have a college degree while 11% have less than a 12th grade education. In 2002, the suburban high school employed 90 regular classroom teachers who had an average of 11.7 years of teaching experience.

The third school is a rural school also in central Oklahoma. The ethnic breakdown based upon the fall enrollment of 2001 was 40% Caucasian, 26% African American, 2% Asian, and 32% Native American. The dropout rate is 3.1% compared to the state average of 3.9%. In terms of the socioeconomic condition of the surrounding school district, both the poverty rate (28%) and unemployment rate (10%) are approximately twice the state average (15% and 5% respectively). Furthermore, 19% of the adults over the age of 25 have completed a college degree while 31% of adults have less than a 12th grade education. In terms of academic performance, 61% of those students scheduled to graduate in 2002 completed the ACT and obtained an average score of 18.9. The average GPA of the seniors in 2002 was 3.2, which is slightly higher than

the state average of 3.0. Finally, the rural high school employed 16 teachers who had, on average, 14.4 years of classroom teaching experience.

In terms of comparison across each of the three schools, the state Office of Accountability website also provided school averages on state mandated end-of-instruction exams in English and American History. The statewide average score for English was 68% (out of 100%) while the state average for American History was 70% (out of 100%). Students in the urban and suburban high schools scored above the state average on the American History exam while students in the rural high school scored an average of 43% which is 27 percentage points lower than the state average. In English, students from each school scored below the state average.

Participants

The participants in this study were 249 high school students from the three high schools who ranged in age from 14 to 19 years. As previously stated, students attending rural, suburban and urban schools were represented in the sample, however, the vast majority of the students (78.7%) attended the urban high school. The sample consisted of 120 male and 129 female students enrolled in English classes with enrollments ranging from 14 to 29 students. The average class size for students in this sample was 22 students. Eight separate classes and teachers were sampled at the urban high school, eight in the suburban and three at the rural.

Caucasians constituted 48.2% of the sample, while 28.5% were African-American, 4.4% were Hispanic, 6.8% were Native Americans, with 12% categorizing themselves as “bi-racial” or “other.” Juniors and seniors each comprised 36.5% (73% collectively) of the sample, while sophomores accounted for 26.1%. Only two freshmen

completed a research packet and therefore freshmen accounted for only .8% of the sample. Finally, two participants (.8%) were enrolled in English I, 25.7% were enrolled in English II, 26.1% were enrolled in English III, 23.3% were enrolled in English IV, while 10.8% were enrolled in Advanced Placement (AP) or Honors English III, and 13.2% were enrolled in AP or Honors English IV.

Measures

The following paragraphs describe the instruments that were used in the current study. Each instrument, except the demographic sheet, was created and validated in previous studies such that the creation of new measures was not required. Each instrument contained a 6 point Likert-style agreement scale ranging from Strongly Disagree (1) to Strongly Agree (6) with questions oriented to the classroom level of specificity.

A demographic sheet (see Appendix A) was created and used to collect basic information from each of the participants including their age, grade, gender, race, grade point average, and information pertaining to their teacher, school and English class.

Cognitive strategy use and classroom level self-efficacy items were derived from the *Survey of Learning* (see Appendix B) developed by Miller et al. (1996). *The Survey of Learning* questionnaire contains 39 items in which eight items are used to measure classroom level self-efficacy, seven items to measure meaningful cognitive engagement, and four items for shallow cognitive engagement. Alpha reliability scores for each of the subscales obtained in previous studies have ranged from .77 for the self-efficacy subscale to .90 for meaningful cognitive engagement items. The shallow cognitive engagement items obtained an alpha reliability score of .81. Examples of meaningful cognitive

engagement strategy questions include “I classify problems into categories before I begin to work them” and “I draw pictures or diagrams to help me solve some problems.”

Conversely, shallow cognitive engagement strategy items include “I find reviewing previously solved problems to be a good way to study for a test” and “I try to memorize the steps for solving problems presented in the text or in class.” An example of a self-efficacy item reads “I am confident about my abilities to do the assignments in this class.”

Perceived instrumentality items were derived from the *Approaches to Learning Survey* (see Appendix C) used in Miller et al. (1999) and developed in Miller et al. (1996). The alpha reliability score for the five perceived instrumentality items in Miller et al. (1999) was .91, which supported the reliability findings of Miller et al. (1996). Furthermore, the perceived instrumentality subscale (with an additional sixth item) was used by Greene et al. (2004) and obtained an alpha reliability score of .90. Examples of perceived instrumentality items are “I do the work assigned in this class because my achievement is important for attaining my dreams” and “I do the work assigned in this class because learning the content plays a role in reaching my future goals.”

The instrument used to assess student achievement goals was the *Patterns of Adaptive Learning Survey* (PALS) (see Appendix D). The PALS is a three dimensional 17-item goal orientation measure that includes subscales for learning goals (6-items), performance-approach goals (5-items), and performance-avoidance goals (6-items) (Midgley, Maehr, Hicks, Roeser, Urdan, Anderman, & Kaplan, 1996). Midgley, Kaplan, Middleton, Maehr, Anderman, Anderman, and Roeser (1998) reported satisfactory internal consistency evidence for each of the three subscales ranging from performance-

approach ($\alpha = .86$) to performance avoidance ($\alpha = .74$) with learning goals acquiring an alpha of .83. Anderman and Anderman (1999) and Anderman, Maehr, and Midgley (1999) have also provided additional evidence supporting the reliability of the PALS in their study concerning social predictors of achievement goals. An example of a learning goal item states, “An important reason why I do my schoolwork is because I like to learn new things” while a performance-approach item reads “I want to do better than other students in my class.” Finally, a performance-avoidance item states “It’s very important to me that I don’t look stupid in my classes.”

Student perception of belonging was measured via Goodenow’s (1993) *Psychological Sense of School Membership* (PSSM) Scale (see Appendix E). The PSSM is comprised of 18 items and contains a single factor latent structure. Goodenow (1993) found evidence of adequate reliability in both an urban ($\alpha = .88$) and suburban ($\alpha = .88$) sample of 611 5th-, 6th-, 7th-, and 8th-grade students. While no information was collected regarding the participant’s ethnicity, the sample contained virtually the same number of boys (312) as girls (294). Anderman and Anderman (1999) obtained additional reliability evidence with a sample of 660 students originally recruited in the 5th grade and followed throughout the transition from grade school to junior high school. Again, the sample was evenly split between males and females and consisted of 50% African-Americans, 39% Caucasian, 7% Hispanic, and 4% “Other.” It should also be noted that for the purposes of this study belonging items were oriented to the classroom level of specificity matching the self-efficacy, goal, perceived instrumentality and cognitive engagement items. Examples of belonging items include “I feel like a real part of this class” and “people in this class are friendly to me.”

Finally, for the purposes of this study, enjoyment was measured via Aiken's *Enjoyment of Mathematics Scale* (Aiken, 1974) (see Appendix F), which was reoriented to address enjoyment of English. For example, whereas in its original form one item stated "I have always enjoyed studying mathematics in school" for use in the current study the item read "I have always enjoyed studying English in school." It should also be noted that Aiken's Enjoyment Scale has been validated and found reliable in both high school and college samples (Adwere-Boamah, 1986; Watson, 1983).

Student achievement was measured via percentage grades obtained at the end of the semester from either the English teacher or the school's Records Office. Student percentage grades were derived from multiple forms of assessment including but not limited to homework assignments, quizzes, projects and unit exams.

Procedure

Parental informed consents were distributed among the students and collected prior to data collection. Only students returning a signed parental consent form were eligible to complete the research packet containing a student informed assent, demographic questions and the five questionnaires. For students in the urban and rural schools, data were collected in their English classes. In the suburban school, data were collected in a class where students were taking part in a school-wide non-academic program designed to promote self-management, interpersonal skills, decision-making, and career planning. During this program, students were randomly assigned to a teacher and attend a class once a week for approximately 45 minutes. Although the previously mentioned class occurred in an on-campus classroom, it was not a class in which students received a letter grade. Therefore, as each participant in the suburban school completed

each of the research questionnaires they were asked to reflect on an English, reading, or literature class in which they were currently enrolled. Furthermore, each student was asked to list the hour and class name of the specific English, reading or literature class in the demographic section so that their percentage grade could be collected at a later date.

The classroom teachers were asked to read a set of instructions to their students who were then told to sign and date the student informed assent if they wished to complete the research packet. It took students approximately 30-45 minutes to complete the entire packet.

Chapter III

Results

Instrument and Subscale Statistics

Cronbach alpha reliability coefficients were calculated for each scale and subscale to serve as an index of internal consistency. Alpha reliability scores for each scale were found to be adequate and ranged from .76 to .92 (see Table 1 on page 44 for alpha coefficients for each subscale).

As Goodenow's (1993) *Psychological Sense of School Membership* (PSSM) scale had not been used with a high school sample prior to the current study, data was collected a second time at the urban high school with a subsample of students who participated in the first data collection. Time 2 data collection occurred approximately one month after Time 1 and was comprised of 63% (123 students) of the original urban sample. Alpha reliability scores were consistency strong at Time 1 and Time 2 (.90 and .93, respectively) as was the correlation between Time 1 and Time 2 belonging scores ($r = .816, p < .001$). The strong correlation provided an indicator of test-retest reliability (i.e., an index of consistency of scores across time), thus providing additional evidence for Goodenow's (1993) *Psychological Sense of School Membership's* appropriateness for use with a high school sample.

In order to provide validity evidence that Goodenow's *Psychological Sense of School Membership* is in fact measuring an affective construct, a zero-order correlation with a measure of enjoyment was generated. The results indicated a positive and significant ($r = .599, p < .0001$) relationship between the two variables thus providing

convergent validity evidence supporting the inclusion of belonging into the affective domain.

Table 1

Descriptive Statistics for all scales and subscales

Subscale	Alpha	Mean	Min- Max	SD	N	N of items
1. Belonging	.90	4.69	2-6	.85	249	18
2. Self-Efficacy	.89	4.81	2-6	.90	249	8
3. Perceived Inst.	.92	4.84	1-6	1.18	249	5
4. Meaningful	.76	3.71	1-6	1.05	249	6
5. Shallow	.82	4.70	1-6	1.08	249	5
6. Mastery	.86	4.75	1-6	1.06	249	5
7. Performance Approach	.87	3.27	1-6	1.33	249	5
8. Performance Avoidance	.78	3.26	1-6	1.36	249	4
9. Enjoyment	.91	4.09	1-6	1.23	247	11
10. Achievement		82.54	10-100	13.62	204	

Group Differences

Two multivariate analyses of variance (MANOVA's) were conducted with participant gender and race as the fixed factors and self-efficacy, belonging, perceived instrumentality, meaningful and shallow cognitive engagement, achievement, enjoyment and the three types of achievement goals serving as the dependent variables. Significant differences emerged between male and female participants in relation to several of the variables examined in this study. For example, male and female mean scores differed significantly in perceptions of belonging (male = 4.63, female = 4.87, $p < .05$), self-efficacy (male = 4.74, female = 5.02, $p < .05$), enjoyment of English (male = 3.78, female = 4.48, $p < .0001$), mastery goals (male = 4.57, female = 4.96, $p < .01$), and shallow cognitive engagement (male = 4.45, female = 4.88, $p < .01$). However, there were no significant differences between male and female participants in terms of their achievement (male = 81.3, female = 83.7, $p = .212$), use of meaningful cognitive engagement strategies (male = 3.6, female = 3.7, $p = .508$), performance-approach (male = 3.44, female = 3.11, $p = .079$), or performance-avoidance goals (male = 3.33, female = 3.15, $p = .373$). Regarding mean differences among racial categories, the only significant differences to emerge were between African-American and Caucasian participants in both shallow cognitive engagement (African-American = 5.08, Caucasian = 4.39, $p = .002$) and meaningful cognitive engagement (African-American = 3.99, Caucasian = 3.37, $p = .004$) strategy use.

Subscale Intercorrelations

To address the first research question, a matrix of Pearson Product Moment correlations were calculated involving belonging, perceived instrumentality, self-efficacy,

mastery goals, performance-approach goals, performance-avoidance goals, meaningful processing, shallow processing, enjoyment and achievement (see Table 2). As was hypothesized, student perception of belonging was found to have significant positive relationships with perceived instrumentality and self-efficacy. Furthermore, student perception of belonging was also found to have a significant positive relationship with achievement, meaningful and shallow cognitive processing, enjoyment and the adoption of mastery goals. However, no relationship was found between belonging and performance-approach goals or performance-avoidance goals.

As expected, significant positive relationships were found between belonging, enjoyment, mastery goals, perceived instrumentality, self-efficacy, and shallow cognitive processing and achievement. However, no relationship was found between course achievement and the use of meaningful processing strategies which is not consistent with previous research (Graham & Golan, 1991; Greene & Miller, 1996; Miller et al., 1996).

The adoption of mastery goals was found to have a significant positive relationship with belonging, achievement, meaningful and shallow cognitive processing, enjoyment, performance-approach and performance-avoidance goals, perceived instrumentality and self-efficacy. Student adoption of performance-avoidance goals was found to relate to mastery goals, performance-approach goals and perceived instrumentality. However, no relationship was found between performance-avoidance goals and belonging, achievement, meaningful and shallow processing, enjoyment, and self-efficacy. Finally, performance-approach goals were related to the use of meaningful cognitive engagement strategies, enjoyment, perceived instrumentality, self-efficacy, and

the adoption of mastery and performance-avoidance goals. Self-efficacy and perceived instrumentality were related to all other variables in a theoretically consistent manner.

Multiple Regression Analyses

Addressing the second and third research questions, three multiple regression analyses were conducted with mastery goals, meaningful cognitive engagement strategy and achievement serving as the dependent variables, respectively. For the first multiple regression, perceived instrumentality and self-efficacy were first entered together, with student perception of belonging being entered in a second block, to predict student adoption of mastery goals. The first regression equation with self-efficacy and perceived instrumentality yielded a significant R^2 ($R^2 = .422$, $F = 89.712$, $p < .0001$), while the addition of belonging into the overall model also yielded a statistically significant R^2 ($R^2 = .470$, $F = 72.41$, $p < .0001$). Importantly, the R^2 change from step one to step two indicated that adding belonging into the regression equation accounted for an additional 4.8% of variance, $F(1, 245) = 22.29$, $p < .0001$, thereby supporting the hypothesis that student perception of belonging adds to the prediction of mastery goals. Furthermore, as can be seen in Table 3, once all three independent variables were entered into the regression equation each yielded a statistically significant Beta.

The second multiple regression used the same set of independent variables, entered in the same sequence, with meaningful cognitive engagement serving as the dependent variable. Generally, this analysis supported the hypothesis that student perception of belonging would significantly add to the prediction of meaningful cognitive engagement strategies. Step one yielded a significant R^2 ($R^2 = .124$, $F = 17.38$, $p < .0001$) as did step two ($R^2 = .146$, $F = 13.943$, $p < .0001$). As with the previous regression, the addition of belonging yielded a statistically significant R^2 change of .022, $F(1, 245) = 6.32$, $p = .013$. As can be seen in Table 4, belonging yielded a significant

Beta as did perceived instrumentality. However, with meaningful cognitive engagement serving as the dependant variable, self-efficacy did not have a significant Beta at either step one or step two.

Finally, a third multiple regression was performed with achievement serving as the dependant variable and self-efficacy, meaningful cognitive engagement and belonging serving as the independent variables. As with the two previous regression analyses, belonging was added in a second block. Again, this order of entry was done to determine whether the addition of belonging would impact the amount of variance being accounted for in course achievement. A statistically significant R^2 was obtained in step one ($R^2 = .115$, $F = 13.118$, $p < .0001$) and step two ($R^2 = .116$, $F = 8.756$, $p = .0001$), however, the addition of belonging resulted in a R^2 change of less than 1%, $F(1, 200) = .143$, $p = .71$. For the overall model only self-efficacy yielded a significant Beta value, (see Table 5). This analysis failed to confirm the hypothesis that student perception of belonging would significantly add to the prediction of course achievement beyond the variance accounted for by self-efficacy and meaningful cognitive engagement. Furthermore, by accounting for 11% of the variance in terms of student achievement, these findings also failed to support the claim that the addition of belonging would result in a higher R^2 than that obtained in Greene et al. (2004).

Table 3

Summary of Hierarchical Regression Analysis for Variables Predicting Mastery Goal by Perceived Instrumentality, Self-Efficacy, and Belonging

Variable	B	SE B	β
Step 1			
Perceived Instrumentality	.452	.049	.503**
Self-Efficacy	.281	.065	.238**
Step 2			
Perceived Instrumentality	.407	.048	.454**
Self-Efficacy	.161	.067	.136**
Belonging	.318	.067	.256**

Note. $R^2 = .42$ for Step 1; $\Delta R^2 = .048$ ($p < .001$).

** $p < .001$

* $p < .05$

Table 4

Summary of Hierarchical Regression Analysis for Variables Predicting Meaningful Cognitive Engagement Strategy by Perceived Instrumentality, Self-Efficacy, and Belonging

Variable	B	SE B	β
Step 1			
Perceived Instrumentality	.266	.060	.299**
Self-Efficacy	.107	.079	.092
Step 2			
Perceived Instrumentality	.236	.061	.266**
Self-Efficacy	.027	.084	.023
Belonging	.213	.085	.173*

Note. $R^2 = .124$ for step 1; $\Delta R^2 = .022$ for step 2 ($p < .05$)

** $p < .001$

* $p < .05$

Table 5

Summary of Hierarchical Regression Analysis for Variables Predicting Achievement by Self-Efficacy, Meaningful Cognitive Engagement, and Belonging

Variable	B	SE B	β
Step 1			
Self-Efficacy	5.47	1.08	.354**
Meaningful Cognitive Engagement	-.772	.891	-.061
Step 2			
Self-Efficacy	5.28	1.19	.342**
Meaningful Cognitive Engagement	-.848	.915	-.067
Belonging	.481	1.27	.029

Note. $R^2 = .115$ for step 1; $\Delta R^2 = .001$ for step 2 ($p > .05$).

** $p < .001$

* $p < .05$

Chapter IV

Discussion

The purposes of this study were to investigate the interrelationships between a student's perception of belonging and a set of social cognitive variables and to determine the impact that belonging has on the adoption of mastery goals, meaningful cognitive engagement, and course achievement. This chapter will begin with a summary of the evidence both supporting and contradicting the hypothesized relationships and will be accompanied by a discussion focusing on the implications of these relationships. This chapter will close with discussions of methodological limitations and directions for future research.

As belonging has received only minimal attention in terms of its relationship with the set of social-cognitive variables used in this study, it was necessary to evaluate the correlational relationships among self-efficacy, perceived instrumentality, perceived belonging, mastery goals, performance-approach and performance-avoidance goals, meaningful and shallow cognitive strategy use and achievement. As hypothesized, student perception of belonging was significantly and positively correlated with self-efficacy and perceived instrumentality. In addition, belonging was found to be significantly and positively related to mastery goals, the use of both meaningful and shallow cognitive processing strategies and achievement. As such, the data revealed that students who reported a sense of belonging in their English class were more likely to invest cognitive energy in course material and experience a greater level of confidence when compared to their classmates who reported a low perception of belonging (Eccles, et al., 1992). These correlational findings are consistent with previous research that has

found that student interpretation of the environment can impact the adoption of achievement goals (Greene et al., 2004; Roeser et al., 1996; Turner et al., 2002), the use of avoidance behaviors (Boekaerts, 1993) and the level of academic engagement and achievement (Roeser, et al., 1996; Turner et al., 2002).

Of particular interest was the finding that there was a significant, positive correlation between belonging and the adoption of mastery goals but no correlation between belonging and performance-approach or performance-avoidance goals. Some might argue that once group membership is attained, a person might seek to avoid negative appraisals by their peers fearing a loss of status within the group. In the case of academics, this fear of negative appraisal could theoretically result in the adoption of performance-avoidance goals. Thus, one might expect to find a correlational relationship between perceptions of belonging and performance-avoidance goals. However, the data suggest that this is not the case. In other words, these data suggest that, perhaps, accompanied by the perception of belonging is the perception that effort need not be spent avoiding the negative appraisals of others or approaching material from a solely competitive framework (Roeser et al., 1996; Boekaerts, 1993).

The hypothesis that belonging would add to the prediction of mastery goals, meaningful cognitive engagement and achievement was partially supported by the data. Concerning mastery goals, belonging was found to be a significant predictor, which supports the contention that affective appraisals do uniquely impact the adoption of mastery goals. These findings also suggest that a failure to consider student's affective appraisals of the classroom environment may factor into a student failing to adopt academically adaptive goals. For example, a student who feels little or no sense of

belonging within a classroom would be less likely to invest their time and energy in that environment when compared to a student who perceives himself or herself to be a valued member of the class (Finn, 1989). These findings are consistent with prior research that has found that teachers who utilized instructional practices that emphasized the meaningfulness of content and deemphasized comparisons of ability were more likely to promote optimal learning (Anderman, 1999; Anderman, Maehr, & Midgley, 1999; Ryan & Patrick, 2001; Meece, 1991).

Although a correlational relationship was found between belonging and achievement, the predictive relationship that was hypothesized was not supported. In fact, while I expected each of the three predictor variables (belonging, self-efficacy, and meaningful cognitive engagement) to be predictive of achievement, only self-efficacy significantly predicted achievement while meaningful cognitive engagement was neither related nor predictive. These findings seem to support Deci and Ryan's (2000) assertion that relatedness or belonging needs, "provide a needed backdrop" for achievement and, therefore, may best be understood as "a distal support" rather than a direct predictor of course grades.

Findings regarding meaningful cognitive engagement should also be noted as neither of the two cognitive engagement variables functioned as theoretically predicted. Previous studies have found a predictive relationship between self-efficacy and meaningful cognitive engagement strategies (Greene & Miller, 1996; Ames & Archer, 1988; Miller et al., 1993; Pintrich & DeGroot, 1990) and a correlational and predictive relationship between meaningful cognitive engagement and achievement (Graham & Golan, 1991; Greene & Miller, 1996; Miller et al., 1996; Pintrich & Garcia, 1991).

However, in this study no such relationships were found to exist. In fact, the current data suggested that shallow cognitive engagement was correlated with achievement while meaningful cognitive engagement was neither correlated nor predictive. Furthermore, although correlated, self-efficacy was not found to be predictive of meaningful cognitive engagement.

Although it is likely that students will have and use an assortment of cognitive strategies within a given class, the results of this study could suggest that the tasks found in these schools do not require the use of the meaningful cognitive engagement strategies as measured in the current study. In other words, the data might suggest that students in the observed English classes are able to rely primarily upon shallow cognitive strategies to complete their assigned tasks. However, it should be noted that numerous meaningful and shallow strategies exist which may or may not be included in the current strategy measure. Therefore, it is conceivable that students may be using meaningful cognitive strategies, yet those specific strategies were not addressed in the current measure. Furthermore, as this sample was derived from high school English classes, the strategies outlined in the measure may be more conducive to subject areas such as math or science or for students in lower level English classes.

Furthermore, the data suggest that belonging is likely a corollary to variables that directly impact achievement. In other words, while belonging does not directly impact achievement, it may serve to promote or sustain factors that do have a direct impact. Future studies should examine how or if belonging sustains perceptions of ability and whether or not confidence alone is enough to promote resiliency among a majority of students. I would argue that while some students may feel sustained by their confidence

in their abilities, a larger proportion of students will prefer engaging in environments where they feel both competent and accepted. As a result, if a choice is to be made between participating in a domain where the person feels confident yet unaccepted and an environment where both competence, relatedness and autonomy “needs” (Deci & Ryan, 1985) can be met, it is likely that the majority of students will psychologically disengage, drop out, or change majors in favor of joining an environment that provides them with the best “fit” (Eccles, et al., 1993).

Summary of Findings

In sum, this study has demonstrated that student perceptions of belonging are both related to and predictive of the adoption of mastery goals, yet unrelated to either performance-approach or performance-avoidance goals. Furthermore, the data revealed that perceptions of belonging were related to self-efficacy beliefs and the perceived instrumentality of course content. Collectively, these findings support belonging’s inclusion into the complex and dynamic discussion of factors influencing student engagement.

Although the correlational analyses indicated a positive relationship between belonging and the use of meaningful cognitive engagement strategies and achievement, the regression analyses failed to support the hypotheses that belonging was predictive of either of the aforementioned dependent variables. When examined collectively, what the correlational and regression analyses suggest is that while belonging is related to the use of meaningful cognitive engagement strategies and achievement, the predictive impact is likely mediated through other factors. These findings support Osterman’s (2000) contention that while belonging is not directly related to achievement, substantial

evidence has been found which suggests that “the sense of belonging influences achievement through its effects on engagement” (p. 341).

Finally, the analysis of the data supported belonging’s categorization as an affective variable and that Goodenow’s *Psychological Sense of School Membership* scale was, in fact, a reliable and valid instrument with which to measure student perception of belonging. As such, the need for including affective variables, such as belonging, into models of student achievement has been supported, as has the necessity of addressing affective appraisals and reactions within the context of educational research. In other words, by excluding an analysis of the classroom climate and the affective, as well as, social-cognitive appraisals of that climate, researchers and teachers will be unable to provide a comprehensive explanation as to why certain behaviors are or are not being exhibited by students in the classroom.

Implications for Practice

Collectively, these findings suggest that by constructing a mastery oriented environment that promotes the perception of belonging, students are likely to experience academic as well as social gains that students operating in less supportive environments would not experience. What these findings also reinforce is that teachers who are interested in constructing a truly mastery-oriented learning environment must take into account student perceptions of belonging. In other words, a teacher who focuses his or her lessons and feedback on effort and personal improvement yet makes minimal attempts to create an inclusive environment is likely inhibiting the optimal benefit that can be derived from an inclusive mastery-oriented classroom.

In terms of specific practice, to increase student perceptions of belonging Osterman (2000) suggested three primary avenues through which teachers can promote the sense of inclusiveness and belonging. First, instructional strategies utilizing cooperative learning have been found to enhance perceptions of belonging. While noting that individual learning preferences differ across students, Osterman (2000) reported that, “in cooperative learning situations, interaction among and between homogeneous and heterogeneous students is more frequent and more positive than in individualistic or competitive learning situations” (p. 349). In addition, the use of cooperative learning strategies in classrooms has also been associated with a decrease in cliques and an increase in the number of reported friendships.

Second, Osterman (2000) noted the importance of establishing and maintaining classroom communication or “dialog” (p. 350). Although dialog would be a primary component or, perhaps, a byproduct of a cooperative learning environment, even outside of that cooperative learning framework it is important for teachers to allow students to “explain their rationale” and take part in “collaborative discussion” (Osterman, 2000, p. 350). Osterman (2000) notes that by providing students with an opportunity to experience positive and constructive interactions with others, students will likely develop a sense of trust and respect stemming from those interactions.

Finally, as the first two practices dealt with student interactions with peers, a third area discussed by Osterman (2000) is that of teacher support. Specifically, for students to feel a sense of belonging, teachers must recognize that they are the primary conduits of support. Therefore teachers must be cognizant of this role and understand the positive or negative impact that they can have on the educational and social development of their

students. Furthermore, teachers must be aware of their own perceptions of students and how those perceptions may translate into favoritism or other forms of differential treatment (Altenbaugh, Engel, & Martin, 1995; Gamoran & Berends, 1987; Ladd, 1990; Wentzel & Asher, 1995). The unintended result may be the creation of a class hierarchy that promotes “competitive, disruptive, and largely dyadic interactions” (p. 355). However, teachers who promote an inclusive and mastery-oriented classroom are, according to Osterman (2000), encouraging and modeling both a prosocial and academically supportive environment.

Limitations

As with any study, several limitations exist that will now be addressed. First, while the purpose of this study did not involve examining differences across schools, three schools of varying sizes and locations were used as data sources. However, of the 249 students that completed the research questionnaires, 196 (78.7%) were from the urban school. As such, the small number of suburban and rural students in the sample limits the generalizability of the findings to schools outside of an urban setting.

Another limitation in this study is that previous achievement in English was not measured in the current study. It is possible that negative interactions or low achievement in previous English courses could taint student perception of their current English class, thereby low scores in belonging could reflect more than the sum of interactions that have taken place in their current class. However, it should be noted that since data was collected at approximately the midpoint in the semester, scores should more likely reflect student perceptions of the current course, to the exclusion of previous semesters.

Third, as the questionnaires asked students to reflect on their experiences in their current English class, the findings of this study are limited in their generalizability to other content areas. It should be stated, however, that the purpose of the current study was not to examine student perceptions of English but how the perception of belonging impacts engagement and achievement. As such, for this study, English courses were selected primarily to control for differences in content.

For unknown reasons I was unable to contact the Assistant Principal at the suburban school in order to obtain percentage grades. I would argue that because the number of participants at the suburban school was small relative to the overall sample size any differences in mean scores in achievement would likely make a minimal impact, if any. However, this limitation does reinforce the necessity of refraining from generalizing the findings to suburban schools as stated earlier.

Finally, it should be noted that these are correlational findings that do not indicate causal relationships. While laboratory studies could be used to control variables and provide researchers with more causal explanations for student performance, ethically it would be challenging to manipulate belonging in an authentic classroom setting.

Implications for Future Research

Several interesting and potentially important questions exist regarding the antecedents of belonging and belonging's impact on student behavior. Primarily, questions remain as to why and where students derive their perceptions of belonging. In other words, do teachers, classmates, or the course content make a differential impact on student perception of belonging and is that impact dependent upon the developmental level of the student? For example, are grade school student's perceptions of belonging

dictated by their perceived relationship with the teacher while junior high school students obtain a sense of belonging based on their relationships with peers? Questions also remain regarding the trajectory of belonging across a semester and throughout the school year. In other words, is a student's perception of belonging stable or does it fluctuate across time and between classes?

Second, as this study has addressed the positive impact that belonging may have on engagement and achievement, it is possible that the need to belong may also be a potential hindrance to student's academic engagement? For example, what is the social and academic impact of a student who acquires a sense of belonging within a group that holds negative views toward school and achievement? Furthermore, is the need to belong as universal a need as self-determination theory would suggest? Future studies should examine how the need to belong impacts student's perceptions of the academic environment and how those perceptions translate into academic engagement and achievement.

Future studies should also examine the degree to which student perception of belonging and actual social relationships are congruent. In other words, it may be possible for student held perceptions regarding personal status and ability to be inconsistent with the perceptions held by his or her peers. Sociometric studies (Coie, Dodge, & Coppotelli, 1982) could provide evidence for the consistency between perception and reality. Finally, as this is not the first study to suggest the academic benefits of belonging, various strategies already exist for developing a supportive community, however, discrepancies remain in terms of theory and practice (Osterman, 2000). As such it is important to continue developing, implementing, and studying

school or classroom based strategies intended to encourage acceptance and belonging while promoting rigorous academic standards.

Conclusion

The findings of the current study add to the growing body of evidence that suggests a need to emphasize effort and belonging as opposed to competition and comparisons of ability (Battistich et al., 1995; Roeser et al., 1996). Although belonging was not found to directly impact a student's course grade, the results do indicate that what achievement requires are the adoption or development of factors (i.e., self-efficacy and mastery goals) that are made more likely once a sense of belonging has been established. Those interested in student success would be wise to consider the role that a sense of belonging plays in the lives of students and the impact that belonging, or failing to perceive belonging, may have on their academic and social development.

References

- Adwere-Boamah, J. (1986). Factorial validity of the Aiken-Dreger mathematics attitude scale for urban school students. *Educational and Psychological Measurement, 46*, 233-236.
- Aiken, L.R. (1974). Two scales of attitude toward Mathematics. *Journal of Research in Mathematics Education, 5*, 67-71.
- Altenbaugh, R.J., Engel, D.E., Martin, D.T. (1995). *Caring for kids: A critical study of urban school leavers*. Bristol, PA: Falmer.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261-271.
- Ames, C. & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology, 80*, 260-270.
- Anderman, L.H. (1999). Classroom goal orientation, school belonging and social goals as predictors of students' positive and negative affect following the transition to middle school. *Journal of Research and Development in Education, 32*, 89-103.
- Anderman, L.H., & Anderman, E.M. (1999). Social predictors of changes in students' achievement goal orientations. *Contemporary Educational Psychology, 24*, 21-37.
- Anderman, E.M., Griesinger, T., & Westerfield, G. (1998). Motivation and cheating during adolescence. *Journal of Educational Psychology, 90*, 84-93.
- Anderman, E.M., Maehr, M.L., & Midgley, C. (1999). Declining motivation after the transition to middle school: Schools can make a difference. *Journal of Research and Development in Education, 32*, 131-147.

- Anderman, E., & Midgley, C. (1997). Changes in personal achievement goals and perceived classroom goal structures across the transition to middle level schools. *Contemporary Educational Psychology, 22*, 269-298.
- Anderman, E.M. & Young, A.J. (1994). Motivation and strategy use in science: Individual differences and classroom effects. *Journal of Research in Science Teaching, 31*, 811-831.
- Andersen, C.S. (1982). The search for school climate: A review of the research. *Review of Educational Research, 52*, 368-420.
- Archer, J. (1994). Achievement goals as a measure of motivation in university students. *Contemporary Educational Psychology, 19*, 430-446.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1994). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (1997). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Bulletin, 84*, 191-215.
- Batcher, E. (1981). *Emotions in the classroom: A study of children's experience*. New York: Praeger.
- Battistich, V. & Hom, A. (1997). The relationship between student's sense of their school as a community and their involvement in problem behaviors. *American Journal of Public Health, 87*, 1997-2001.

- Battistich, V., Solomon, D., Kim, D., Watson, M., & Schaps, E. (1995). Schools as communities, poverty levels of student populations, and student' attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal*, 32, 627-658.
- Battistich, V., Solomon, D., Watson, M., & Schaps, E. (1997). Caring school communities. *Educational Psychologists*, 32, 137-151.
- Baumeister, R.F. (1982). Self-esteem, self-presentation, and future interaction: A dilemma of reputation. *Journal of Personality*, 50, 29-45.
- Baumeister, R.F. & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529.
- Boekaerts, M. (1993). Being concerned with well-being and with learning. *Educational Psychologist*, 28, 149-167.
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation anxiety and anger*. New York: Basic Books.
- Brickman, S., & Miller, R.B. (1998, March). *Valuing of future goals and instrumentality as predictors of cognitive engagement*. Paper presented at the International Conference on Motivation, Thessaloniki, Greece,
- Brickman, S., & Miller, R.B. (2001). The impact of sociocultural context on future goals and self-regulation. In D.M. McInerney and S. Van Etten (Eds.), *Research on Sociocultural Influences on Motivation and Learning* (pp. 119-137). Greenwich, CT: Information Age Publishing.
- Brown, J.H., D'Emidio-Caston, M., & Benard, B. (2000). *Resilience Education*. Thousand Oaks, California: Corwin Press.

- Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology, 79*, 474-482.
- Byrnes, J.P. (2003). Factors predictive of mathematics achievement in white, Black, and Hispanic 12th graders. *Journal of Educational Psychology, 95*, 316-326.
- Cialdini, R.B., Borden, R.J., Thorne, A., Walker, M.R., Freeman, S., & Sloan, L.R. (1976). Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology, 34*, 366-375.
- Coie, J.D., Dodge, K.A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18*, 557-570.
- Connell, J.P. & Wellborn, J.G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-esteem processes. In M.R. Gunnar & L.A. Sroufe (Eds.). *Self-processes and development* (Vol. 23). Hillsdale, N.J.: Lawrence Erlbaum Assoc.
- Craik, F.I.M., & Lockhart, R.S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior, 11*, 671-684.
- Crocker, J. & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review, 94*, 608-630.
- Day, E.A., Radosevich, D.J., & Chasteen, C.S. (2003). Construct and criterion related validity of four commonly used goal orientation instruments. *Contemporary Educational Psychology, 28*, 434-464.
- DeBacker, T., & Nelson, R.M. (1999). Variations on an expectancy-value model of motivation in science. *Contemporary Educational Psychology, 24*, 71-94.

- Deci, E.L., Connell, J.P. & Ryan, R.M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, *74*, 580-590.
- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E.L., & Ryan R.M. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well being. *American Psychologist*, *55*, 68-78.
- DeVolder, M.L., & Lens, W. (1982). Academic achievement and future time perspective as a cognitive-motivational concept. *Journal of Personality and Social Psychology*, *42*, 566-571.
- Dweck, C.S. (1986). Motivational processes affecting learning. *American Psychologist*, *41*, 1040-1048.
- Dweck, C.S. & Elliott, E.S. (1983). Achievement motivation. In P.H. Mussen (Ed.). *Handbook of child psychology*. New York: John Wiley & Sons.
- Dweck, C.S., & Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*, 256-273.
- Eccles, J.S. & Midgley, C. (1989). Stage/environment fit: Developmentally appropriate classrooms for early adolescents. In R.E. Ames & C. Ames (Eds.). *Research on motivation in education Vol. 3*. New York: Academic Press.
- Eccles, J.S., Midgley, C., Wigfield, A., Miller-Buchanan, C., Reuman, D., Flanagan, C. & MacIver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, *48*, 90-101.

- Eccles, J.S. & Wigfield, A. (1995). In the mind of the actor: The structure of adolescent achievement task values and expectancy related beliefs. *Society for Personality and Social Psychology Bulletin*, *21*, 215-225.
- Eccles, J.S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In N. Eisenberg & W. Damon (Eds.). *Handbook of child psychology* (5th ed.). New York: John Wiley & Sons.
- Elliot, A. (1997). Integrating the “classic” and “contemporary” approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In M. Maehr & P. Pintrich (Eds.). *Advances in motivation and achievement* (Vol. 10, pp. 143-179). Greenwich, CT: JAI.
- Elliot, A. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologists*, *34*, 169-189.
- Elliot, A. & Church, M. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *72*, 218-232.
- Elliot, A., & Dweck, C.S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*, 5-12.
- Elliot, A. & Harackiewicz, J. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, *70*, 968-980.
- Elliot, A., & McGregor, H.A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *76*, 628-644.

- Elliot, A., & McGregor, H.A., & Gable, S. (1999). Achievement goals, study strategies, and exam performance: A mediational analysis. *Journal of Educational Psychology, 91*, 549-563.
- Elliot, A. & Sheldon, K. (1997). Avoidance achievement motivation: Personal goals analysis. *Journal of Personality and Social Psychology, 73*, 171-185.
- Elliot, A., & Voss, H.L. (1974). *Delinquency and dropout*. Lexington, Mass.: Heath.
- Epstein, S. (1992). The cognitive self, the psychoanalytic self, and the forgotten selves. *Psychological Inquiry, 3*, 34-37.
- Finn, J.D. (1989). Withdrawing from school. *Review of Educational Research, 59*, 117-142.
- Fromm, E. (1956). *The art of loving*. New York: Harper & Brothers.
- Gamoran, A. & Berends, M. (1987). The effects of stratification in secondary schools: Synthesis of survey and ethnographic research. *Review of Educational Research, 57*, 415-435.
- Garnezy, N. (1991). Resilience and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioral Scientist, 34*, 416-430.
- Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools, 1993*, 79-90.
- Goodenow, C., & Grady, K.E. (1993). The relationship of school belonging and friends values to academic motivation among urban adolescent students. *Journal of Experimental Education, 62*, 60-71.

- Graham, S., & Golan, S. (1991). Motivational influences on cognition: Task involvement, ego involvement and depth of information processing. *Journal of Educational Psychology, 83*, 187-194.
- Greene, B.A., & Miller, R.B. (1996). Influences on achievement: Goals, perceived ability, and cognitive engagement. *Contemporary Educational Psychology, 21*, 181-192.
- Greene, B.A., Miller, R.B., Crowson, H.M., Duke, B.L., & Akey, K.L. (2004). Predicting high school students' cognitive engagement and achievement: Contributions of classroom perceptions and motivation. *Contemporary Educational Psychology, 29*, 462-482
- Greene, B.A., DeBacker, T.K., Ravindran, B., & Krows, A.J. (1999). Goals, values, and beliefs as predictors of achievement and effort in high school mathematics classes. *Sex Roles, 40*, 421-458.
- Harackiewicz, J.M., Barron, K.E., & Elliot, A.J. (1998). Rethinking achievement goals: When are they adaptive for college students and why? *Educational Psychologist, 33*, 1-21.
- Hargreaves, A., Earl, L., & Ryan, J. (1996). *Schooling for change: Reinventing education for early adolescents*. Bristol, PA: Falmer.
- Harter, S. (1996). Teacher and classmate influences on scholastic motivation, self-esteem, and level of voice in adolescents. In J. Juvonen & k. Wentzel (Eds.), *Social motivation: Understanding children's school adjustment* (pg. 11-42). New York: Cambridge.

- Harter, S., Whitesell, N.R., & Kowalski, P. (1992). Individual differences in the effects of educational transitions on young adolescents' perceptions of competence and motivational orientation. *American Educational Research Journal, 29*, 777-807.
- Hawkins, J.D., Catalano, R.F., & Miller, J.Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin, 112*, 64-105.
- Henson, R.K. (2002). From adolescent angst to adulthood: Substantive implications and measurement dilemmas in the development of teacher efficacy research. *Educational Psychologist, 37*, 137-150.
- Horney, K. (1945). *Our inner conflicts: A constructive theory of neurosis*. New York: Norton.
- Husman, J., & Lens, W. (1999). The role of the future in student motivation. *Educational Psychologist, 34*, 113-125.
- Irvine, J. J. (1999). The education of children whose nightmares come both day and night. *Journal of Negro Education, 68*, 244-253.
- Joreskog, K.G. & Sorbom, D. (2002). Lisrel 8.52. Chicago: Scientific Software International, Inc.
- Kardash, C.M., & Amlund, J.T. (1991). Self-reported learning strategies and learning from expository text. *Contemporary Educational Psychology, 16*, 117-138.
- Kim, S. (1979). *An evaluation of ombudsman primary prevention program on student drug abuse*. Charlotte, NC: Charlotte Drug Education Center.

- Ladd, G.W. (1990). Having friends, keeping friends, making friends, and being liked by peers in the classroom. Predictors of children's early school adjustment? *Child Development, 61*, 1081-1100.
- Lent, R.W. & Hackett, G. (1987). Career self-efficacy: Empirical status and future directions. *Journal of Vocational Behavior, 30*, 347-382.
- Locke, E.A. & Latham, G.P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, N.J.: Prentice Hall.
- Maehr, M.L. (1984). Meaning and motivation: Toward a theory of personal investment. In C. Ames and R. Ames (Eds.), *Research on motivation in education: Student motivation*. New York: Academic Press.
- Maehr, M.L. (1991). The "psychological environment" of school: A focus for school leadership. In P. Thurstan & Zoghates (Eds.), *Advances in educational administration*. Greenwich, CT: JAI Press.
- Markus, H.R. & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224-253.
- Markus, H.R. & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954-969.
- Maslow, A.H. (1968). *Toward a psychology of being*. New York: Van Nostrand.
- Meece, J.L. (1991). The classroom context and students' motivational goals. In M.L. Maehr & P.R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7, pp. 261-285). Greenwich, CT: JAI Press.
- Meece, J.L., Blumenfeld, P.C., & Hoyle, R.H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology, 80*, 514-523.

- Middleton, M., & Midgley, C. (1997). Avoiding the demonstration of lack of ability: An underexplored aspect of goal theory. *Journal of Educational Psychology, 89*, 710-718.
- Midgley, C. (1993). Motivation and middle level school. In M.L. Maehr & P.R. Pintrich (Eds.), *Advances in motivation and achievement: Vol. 8, Motivation and adolescent development* (pp. 217-274). Greenwich, CT: JAI Press.
- Midgley, C., Anderman, E., & Hicks, L. (1995). Differences between elementary and middle school teachers and students: A goal theory approach. *Journal of Early Adolescence, 15*, 90-113.
- Midgley, C., Arunkumar, R., & Urdan, T. (1996). "If I don't do well tomorrow there's a reason:" Predictors of adolescent use of academic self-handicapping strategies. *Journal of Educational Psychology, 88*, 423-434.
- Midgley, C., Feldlaufer, H., & Eccles, J.S. (1989). Change in teacher efficacy and student self-and task-related beliefs in mathematics during the transition to junior high school. *Journal of Educational Psychology, 81*, 247-258.
- Midgley, C., Kaplan, A., Middleton, M., Maehr, M.L., Urdan, T., Anderman, L.H., Anderman, E., & Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology, 23*, 113-131.
- Midgley, C., Maehr, M.L., Hicks, L., Roeser, R., Urdan, T., Anderman, E.M., & Kaplan, A. (1996). Manual: *Patterns of adaptive learning survey (PALS)*. Leadership and Learning Laboratory, University of Michigan, Ann Arbor.

- Miller, L. S. (1995). *An American imperative: Accelerating minority educational advancement*. New Haven, CT: Yale University Press.
- Miller, R.B., Behrens, J.T., Greene, B.A., & Newman, D. (1993). Goal and perceived ability: Impact on student valuing, self-regulation, and persistence. *Contemporary Educational Psychology, 18*, 2-14.
- Miller, R.B., & Brickman, S.J. (2004). A model of future-oriented motivation and self-regulation. *Educational Psychology Review, 16*, 9-33.
- Miller, R.B., DeBacker, T.K. & Greene, B.A. (1999). Perceived instrumentality and academics: The link to task valuing. *Journal of Instructional Psychology, 26*, 250-261.
- Miller, R.B., Greene, B.A., Montalvo, G.P., Ravindran, B., & Nichols, J.D. (1996). Engagement in academic work: The role of learning goals, future consequences, pleasing others and perceived ability. *Contemporary Educational Psychology, 21*, 388-422.
- National Center for Education Statistics (2000). Dropout rates in the United States: 2000. Washington D.C. Author.
- Nicholls, J.G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*, 328-346.
- Nicholls, J.G., Cheung, P.C., Lauer, J., & Patashnick, M. (1989). Individual differences in academic motivation: Perceived ability, goals, beliefs, and values. *Learning and Individual Differences, 1*, 63-84.
- Nolan, S.B. (1988). Reasons for studying: Motivational orientations and study strategies. *Cognition and Instruction, 5*, 269-287.

- Osborne, J.W. (1997). Identification with academics and academic success among community college students. *Community College Review, 25*, 59-67.
- Osterman, K.F. (2000). Students' need for belonging in the school community. *Review of Educational Research, 70*, 323-367.
- Pajares, F. (1996). Self-efficacy beliefs and mathematical problem solving. *Contemporary Educational Psychology, 21*, 325-344.
- Pajares, F. (1997). Current directions in self-efficacy research. In M. Maehr P.R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 1-49). Greenwich, CT: JAI.
- Pajares, F., & Miller, D. (1994). Role of self-efficacy and self-concept beliefs in mathematical problem solving: A path analysis. *Journal of Educational Psychology, 86*, 193-203.
- Pedhauzer, E.J. (1997). *Multiple regression in behavioral research: Explanation and prediction*. Harcourt Brace College Publishers: New York.
- Pintrich, P.R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology, 95*, 667-686.
- Pintrich, P.R., & DeGroot, E.V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*, 33-40.
- Pintrich, P.R., & Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M.L. Maehr & P.R. Pintrich (Eds.), *Advances in motivation*

- and achievement: Goals and self-regulatory processes* (Vol. 7, pp. 371-402).
Greenwich, CT: JAI Press.
- Raynor, J.O. (1970). Relationship between achievement-related motives, future orientation, and academic performance. *Journal of Personality and Social Psychology, 15*, 28-33.
- Raynor, J.O. (1974). Future orientation in the study of achievement motivation. In J.W. Atkinson & J.O. Raynor (Eds.). *Motivation and Achievement*. Washington D.C.: Winston.
- Roeser, R., Midgley, C., & Urdan, T.C. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of Educational Psychology, 88*, 408-422.
- Rumberger, R.W., & Thomas, S.L. (2000). The distribution of dropout and turnover rates among urban and suburban high schools. *Sociology of Education, 73*, 39-67.
- Rutter, M. (1983). School effects on pupil progress: Research findings and policy implications. *Child Development, 54*, 1-29.
- Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.
- Ryan, R.M., & Grolnick (1986). Origins and pawns in the classroom: Self-reports and projective assessments of individual differences in children's personality. *Journal of Personality and Social Psychology, 50*, 550-558.

- Ryan, A.M., & Patrick, H. (2001). The classroom social environment and changes in adolescents' motivation and engagement during middle school. *American Educational Research Journal*, 38, 437-460.
- Schraw, G., Horn, C., Thorndike-Christ, T., & Bruning, R. (1995). Academic goal orientations and student classroom achievement. *Contemporary Educational Psychology*, 20, 359-368.
- Schunk, D.H. (1989). Self-efficacy and cognitive skill learning. In C. Ames & R. Ames (Eds.), *Research and motivation in education. Vol. 3: Goals and cognitions* (pp.13-44). San Diego, CA: Academic Press.
- Schunk, D.H. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, 26, 207-231.
- Schunk, D.H. & Cox, P.D. (1986). Strategy training and attributional feedback with learning disabled students. *Journal of Educational Psychology*, 78, 201-209.
- Schunk, D.H. & Swartz, C.W. (1993). Goals and progress feedback: Effects on self-efficacy writing achievement. *Contemporary Educational Psychology*, 18, 337-354.
- Simon, J., DeWitte, S. & Lens, W. (2000). Wanting to have vs. wanting to be: The effect of perceived instrumentality on goal orientation. *British Journal of Psychology*, 91, 335-352.
- Skaalvik, E. (1997). Self-enhancing and self-defeating ego orientations: Relations with task and avoidance orientation, achievement, self-perceptions, and anxiety. *Journal of Educational Psychology*, 89, 71-81.

- Sletta, O., Valas, H., & Skaalvik, E. (1996). Peer relations, loneliness, and self-perceptions in school-age children. *British Journal of Educational Psychology*, *66*, 431-445.
- Smith, J.L. & White, P.H. (2001). Development of the domain identification measure: A tool for investigating stereotype threat effects. *Educational and Psychological Measurement*, *61*, 1040- 1057.
- Solomon, D., Battistich, V., Watson, M., Schaps, E., & Lewis C. (2000). A six-district study of educational change: Direct and mediated effects of the Child Development Project. *Social Psychology of Education*, *41*, 3-51.
- Solomon, D., Watson, M., Battistich, V., Schaps, E., & DeLucci, K. (1996). Creating classrooms that students experience as communities. *American Journal of Community Psychology*, *24*, 719-748.
- Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 181-227). San Diego, CA: Academic Press.
- Tesser, A. & Campbell, J. (1980). Self-definition: The impact of the relative performance and similarity of others. *Social Psychology Quarterly*, *43*, 341-347.
- Tice, D.M. (1992). Self-presentation and self-concept change: The looking glass self as magnifying glass. *Journal of Personality and Social Psychology*, *63*, 435-451.
- Tinto, V. (1987). *Leaving college: The causes and cures of student attrition*. Chicago: University of Chicago Press.

- Trusty, J., & Dooley-Dickey, K. (1993). Alienation from school: An exploratory analysis of elementary and middle school students' perceptions. *Journal of Research and Development in Education, 26*, 233-243.
- Turner, J.C., Midgley, C., Meyer, D.K., Gheen, M., Anderman, E.M., Kang, Y., & Patrick, H. (2002). The classroom environment and students' reports of avoidance strategies in mathematics: A multimethod study. *Journal of Educational Psychology, 94*, 88-106.
- Urduan, T. (1997). Examining the relations among early adolescent student's goals and friends' orientation toward effort and achievement in school. *Contemporary Educational Psychology, 22*, 165-191.
- Urduan, T., Midgley, C., & Anderman, E.M. (1998). The role of classroom goal structure in students' use of self-handicapping. *American Educational Research Journal, 35*, 101-122.
- Utman, C.H. (1997). Performance effects of motivational state: A meta-analysis. *Personality and Social Psychology Review, 1*, 170-182.
- Voelkl, K.E. (1996). Measuring student's identification with school. *Educational and Psychological Measurement, 56*, 760-770.
- Voelkl, K.E. (1997). Identification with school. *American Journal of Education, 105*, 294-317.
- Watson, J.M. (1983). *The Aiken attitude to mathematics scales: Psychometric data on reliability and discriminate validity, 43*, 1247-1253.

- Wehlage, G. (1989). Dropping out: Can schools be expected to prevent it? In L. Weis, E. Farrar, & H. Petrie (Eds.), *Dropouts from school*. Albany, NY: State University of New York Press
- Wehlage, G., Rutter, R.A., Smith, G.A., Lesko, N. & Ricardo, R. (1990). *Reducing the risk: Schools as communities of support*. Philadelphia, PA: Falmer.
- Wentzel, K.R. (1996). Social and academic motivation in middle school: Concurrent and long-term relations to academic effort. *Journal of Early Adolescence*, 16, 390-406.
- Wentzel, K.R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, 89, 411-419.
- Wentzel, K.R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, 90, 202-209.
- Wentzel, K.R. & Asher, S.R. (1995). The academic lives of neglected, rejected, popular, and controversial children. *Child Development*, 66, 754-763.
- Werner, E.E. (1986). Resilient children of alcoholics: A longitudinal study from birth to age 18. *Journal of Studies on Alcohol*, 47, 34-40.
- Werner, E. E. (1989). High risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry*, 59, 72-81
- Werner, E.E., & Smith, R.S. (1977). *Kauai's children come of age*. Honolulu: University of Hawaii Press.
- Wigfield, A. & Eccles, J.S. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review*, 12, 265-310.

- Wigfield, A. & Eccles, J.S. (2002). The development of competence beliefs, expectancies of success, and achievement values from childhood through adolescence. In Wigfield, A. & Eccles, J.S. (Eds). *Development of achievement motivation* (pp. 91-120). San Diego, CA: Academic Press.
- Wolters, C.A., Yu, S.L., & Pintrich, P.R. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences, 8*, 211-238.
- Zeldin, A.L. & Pajares, F. (2000). Against the odds: Self-efficacy beliefs of women in mathematical, scientific and technological careers. *American Educational Research Journal, 37*, 215-246.
- Zimmerman, B.J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal, 31*, 845-862.

Appendix A

Appendix A

Demographic Information

General instructions: Think about the same English class while you are filling out all the attached surveys. The following surveys are about student goals, attitudes, strategies, and what they think and believe about their learning.

Initial Questions:

1) How long have you been at this school? ____ years

2) Which English class are you currently taking?

Name of class _____

Name of Teacher _____

3) My English teacher is a: Male Female (circle one)

4) I have had this teacher before? YES NO (circle one)

If yes, in general, I felt successful in that teacher's class. YES NO (circle one)

5) What is your grade point average (GPA) at this high school? _____

If you have a better idea of average letter grade, then tell me that. _____

6) What is your age _____

Please tell me your grade, gender and race in the space below by circling the appropriate response.

<u>Grade</u>	<u>Gender</u>	<u>Race/ethnicity</u>
Freshman	Male	Caucasian/White
Sophomore	Female	African American
Junior		Hispanic/Latino/a
Senior		Native American
		Bi-racial
		Other _____

Appendix B

Appendix B

Survey of Learning

Directions - The following questions ask about some of your specific behaviors as you study for this class. Respond to the statements along the following 6-point scale. Circle your response on the line following the item.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

In this **English** class...

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1. When I work a problem, I analyze it to see if there is more than one way to get the right answer. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. I examine example problems that have already been worked to help me figure out how to do similar problems on my own. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I find reviewing previously solved problems to be a good way to study for a test. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. I classify problems into categories before I begin to work them. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. I try to memorize the steps for solving problems presented in the text or in class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I work several examples of the same type of problem when studying so I can understand the problems better. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. I draw pictures or diagrams to help me solve some problems. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. I work practice problems to check my understanding of new concepts or rules. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. When I study for tests I use solved problems in my notes or in the book to help me memorize the steps involved. | 1 | 2 | 3 | 4 | 5 | 6 |

10. When studying, I try to combine different pieces of information from course material in new ways. 1 2 3 4 5 6
11. When I study for tests I review my class notes and look at solved problems. 1 2 3 4 5 6

Appendix C

Appendix C

Approaches to Learning

Directions: The following statements represent beliefs students may have about their ability in a particular academic course. Read each statement and indicate how much you agree that the statement is true of you in your English class. Use the 6-point scale below to indicate your response. The idea behind the agreement scale is that sometimes we agree or disagree strongly (we choose a 6 or a 1), because we have strong feelings about the issue and our opinion, but other times we have an opinion about which we do not feel strongly (we choose a 2, 3, 4, or a 5, depending on the degree of agreement or disagreement). Circle the number that corresponds to your answer.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	6

In my English class...

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1. I am confident I have the ability to understand the ideas taught in this course. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. I am confident about my ability to do the assignments in this class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I am confident I can perform as well or better than others in this class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Compared to others in this class, I think I am good in English. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Compared with other students in this class my skills are weak. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I have a good understanding of the concepts I've been taught in this class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. I am certain I understand the concepts presented in this class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. I think I am doing better than other students in this class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. I do the work assigned in this class because my | 1 | 2 | 3 | 4 | 5 | 6 |

achievement plays a role in reaching my future goals.

- | | | | | | | |
|--|---|---|---|---|---|---|
| 10. I do the work assigned in this class because my achievement is important for attaining my dreams. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. I do the work assigned in this class because understanding this content is important for becoming the person I want to be. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. I do the work assigned in this class because learning the content plays a role in reaching my future goals. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. I do the work assigned in this class because learning this material is important for attaining my dreams. | 1 | 2 | 3 | 4 | 5 | 6 |

Appendix D

Appendix D

Patterns of Adaptive Learning Survey (PALS)

Directions: The following statements represent beliefs students may have about the reasons for doing schoolwork. Read each statement and indicate how much you agree that it is true of you in this class. Use the 6-point scale below to indicate your response. Fill in circle on the answer sheet corresponding to your answer.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	

I do the work in this **English** class because...

1. It's important to me that I learn a lot of new concepts this year. 1 2 3 4 5 6
2. It's important to me that other students in my class think I am good at my class work. 1 2 3 4 5 6
3. It's important to me that I don't look stupid in class. 1 2 3 4 5 6
4. One of my goals in class is to learn as much as I can. 1 2 3 4 5 6
5. One of my goals is to show others that I'm good at my class work. 1 2 3 4 5 6
6. One of my goals is to keep others from thinking I'm not smart in class. 1 2 3 4 5 6
7. One of my goals is to master a lot of new skills this year. 1 2 3 4 5 6
8. One of my goals is to show others that class work is easy for me. 1 2 3 4 5 6
9. It's important to me that my teacher doesn't think that I know less than others in class. 1 2 3 4 5 6
10. It's important to me that I thoroughly understand my class work. 1 2 3 4 5 6
11. One of my goals is to look smart in comparison to others in class. 1 2 3 4 5 6
12. One of my goals in class is to avoid looking like I have trouble doing the work. 1 2 3 4 5 6

13. It's important to me that I improve my English skills this year. 1 2 3 4 5 6

14. It's important to me that I look smart compared to others in class. 1 2 3 4 5 6

Appendix E

Appendix E

Psychological Sense of School Membership Scale (PSSM)

Directions: The following statements represent beliefs students may have about their perception of membership within their classroom. Read each statement and indicate how much you agree that it is true of you in this class. Use the 6-point scale below to indicate your response. Circle the number that corresponds to your answer.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	6

In this **English** class ...

- | | |
|--|-------------|
| 1. I feel like a real part of this class | 1 2 3 4 5 6 |
| 2. People in this class notice when I'm good at something. | 1 2 3 4 5 6 |
| 3. It is hard for people like me to be accepted in this class. | 1 2 3 4 5 6 |
| 4. Other students in this class take my opinions seriously. | 1 2 3 4 5 6 |
| 5. My teacher in this class is interested in me as a person. | 1 2 3 4 5 6 |
| 6. Sometimes I feel as if I don't belong in this class. | 1 2 3 4 5 6 |
| 7. I can talk to my teacher if I have a problem. | 1 2 3 4 5 6 |
| 8. People in this class are friendly to me. | 1 2 3 4 5 6 |
| 9. The teacher is not interested in people like me. | 1 2 3 4 5 6 |
| 10. I am included in lots of activities in this class. | 1 2 3 4 5 6 |
| 11. I am treated with as much respect as other students in this class. | 1 2 3 4 5 6 |
| 12. I feel very different from most other students in this class. | 1 2 3 4 5 6 |
| 13. I can really be myself in this class. | 1 2 3 4 5 6 |
| 14. The teacher in this class respects me. | 1 2 3 4 5 6 |
| 15. People in this class know I can do good work. | 1 2 3 4 5 6 |

16. I wish I were in a different class. 1 2 3 4 5 6
17. I feel proud of belonging to this class. 1 2 3 4 5 6
18. Other students in this class like me the way I am. 1 2 3 4 5 6

Appendix F

Appendix F

Enjoyment of Mathematics Scale

Directions: The following statements represent beliefs some students have concerning the satisfaction they receive from taking part in English. Read each statement and indicate how much you agree that it is true of you in this class. Use the 6-point scale below to indicate your response. Circle the number that corresponds to your answer for each question.

Strongly Agree							Strongly Disagree			
1	2	3	4	5	6					
1. In my English class, I enjoy going beyond the assigned work.					1	2	3	4	5	6
2. English is enjoyable to me.					1	2	3	4	5	6
3. English makes me feel uneasy.					1	2	3	4	5	6
4. I am interested in using what I learn in English outside of a school setting.					1	2	3	4	5	6
5. I have never liked English.					1	2	3	4	5	6
6. I have always enjoyed studying English.					1	2	3	4	5	6
7. I would like to develop my English skills.					1	2	3	4	5	6
8. This English class makes me feel uncomfortable.					1	2	3	4	5	6
9. I am interested in acquiring further knowledge of English.					1	2	3	4	5	6
10. English is dull and boring.					1	2	3	4	5	6
11. This English class is very interesting to me.					1	2	3	4	5	6

Appendix G

Appendix G

**Parental/Legal Guardian Permission Form for Research being Conducted
Under the Auspices of the
University of Oklahoma – Norman Campus**

Dear parent or guardian:

I am requesting your permission to allow your student to participate in a study called "Classroom Belonging, Self-Efficacy, and Perceived Instrumentality: Influences on Academic Engagement and Achievement." The goal of this study is to examine factors that affect a student's willingness to take part in behaviors associated with positive academic outcomes such as goal setting and the use of meaningful learning strategies.

If you agree to allow your son or daughter to participate they will be asked to complete five (5) short questionnaires at two different points in the semester. These questionnaires will focus on various aspects of student motivation and learning strategies as they relate to academic achievement. It will take each student approximately 30 minutes to complete all the questionnaires. Finally, as this study has to do with the effects of certain variables on academic achievement, it will be necessary to obtain your son or daughters course grade at the end of the semester. Each student's grade, along with all the information obtained throughout the course of this study, will be kept strictly confidential and will not be seen by anyone other than the researcher at any time.

All the information provided by your student throughout the course of this study will be kept completely confidential by the researcher. An identifying number will be assigned to each student and their name will not be directly linked to the questionnaires they complete. Furthermore, all information derived from this study will be reported in terms of numbers and group findings, never in terms of individual names. There is no threat of physical or psychological harm related to participating in this study nor are there direct benefits of participation. As participation in this study is completely voluntary, your student may choose to withdraw from this project at any time. As such, your student may refuse to participate without any penalty or loss of any educational privileges that they now experience.

If you have any questions about this project, you may contact Christopher Walker at the University of Oklahoma via email (cwalker@ou.edu) or by leaving a message with the Educational Psychology office (325-5974). You may also contact Dr. Barbara Greene who serves as the faculty sponsor for this research project (office phone (405) 325-1534 or barbara@ou.edu). Additionally, you may call the University of Oklahoma-Norman Campus Institutional Review Board at 405-325-8110 with questions about the rights of your son or daughter as a research participant.

Thank you for your time and consideration.

Sincerely,

Christopher Walker, M.Ed.
Department of Educational Psychology
University of Oklahoma

_____ I consent to my son or daughter participating in the study called "Classroom Belonging, Self-Efficacy, and Perceived Instrumentality: Influences on Academic Engagement and Achievement" I realize that my son or daughter's participation will involve completing four (4) questionnaires. I am also aware that the responses to the questionnaires will be kept completely confidential by the researchers.

_____ I consent to the researchers obtaining the course grade of my son or daughter with the explicit understanding that this information will be kept strictly confidential.

Your Name Printed: _____

Your Signature: _____

Appendix H

Appendix H

**Child Assent Form for Participation in Research that is Being Conducted
Under the Auspices of
The University of Oklahoma – Norman Campus**

Dear student:

I am requesting your participation in a study called “Classroom Belonging, Self-Efficacy, and Perceived Instrumentality: Influences on Academic Engagement and Achievement.” The goal of this study is to examine factors that affect a student’s willingness to take part in behaviors associated with positive academic outcomes such as goal setting and the use of meaningful learning strategies.

If you agree to participate you will be asked to complete five (5) short questionnaires at two different points in the semester. These questionnaires will focus on various aspects of student motivation and learning strategies as they relate to academic achievement. It will take you approximately 30 minutes to complete all the questionnaires. Finally, as this study has to do with the effects of certain variables on academic achievement, it will be necessary to obtain your course grade at the end of the semester. Your grade, along with all the information obtained throughout the course of this study, will be kept strictly confidential and will not be seen by anyone other than the researcher at any time.

Again, all the information you provide throughout the course of this study will be kept completely confidential by the researcher. An identifying number will be assigned to you and your name will not be directly linked to the questionnaires you complete. Furthermore, all information derived from this study will be reported in terms of numbers and group findings, never in terms of individual names. There is no threat of physical or psychological harm related to participating in this study. As participation in this study is completely voluntary, you may choose to withdraw from this project at any time. Furthermore, you may refuse to participate without penalty or loss of any educational privileges that you now experience.

If you have any questions about this project, you may contact Christopher Walker at the University of Oklahoma via email (cwalker@ou.edu) or by leaving a message with

the Educational Psychology office (325-5974). You may also contact Dr. Barbara Greene who serves as the faculty sponsor for this research project (office phone (405) 325-1534 or barbara@ou.edu). Additionally, you may call the University of Oklahoma-Norman Campus Institutional Review Board at 405-325-8110 with questions about your rights as a research participant.

Thank you for your time and consideration.

Sincerely,

Christopher Walker, M.Ed.
Department of Educational Psychology
University of Oklahoma

_____ I consent to participate in the study called "Classroom Belonging, Self-Efficacy, and Perceived Instrumentality: Influences on Academic Engagement and Achievement." I realize that my participation will involve completing five (5) questionnaires. I am also aware that the responses to the questionnaires will be kept completely confidential by the researchers.

_____ I consent to the researcher obtaining my course grade with the understanding that this information will be kept strictly confidential.

Your Name Printed: _____

Your Signature: _____