

AN EXAMINATION OF STUDENTS' PERCEPTIONS OF
GOAL ORIENTATION IN THE CLASSROOM
AND TEACHERS' BELIEFS
ABOUT INTELLIGENCE AND TEACHER EFFICACY

by

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B.S., Kansas State University, 1980

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Submitted in partial fulfillment of the
requirements for the degree

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ABSTRACT

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Participants in this study were high school social science teachers teaching in 17 schools in northeast Kansas ($N = 63$), and their students enrolled in social science classes ($N = 1,214$). The survey instruments were administered during the Spring 2006 semester during regularly scheduled courses. Data were analyzed using Pearson product-moment correlations, multiple regression, and other statistical techniques. A statistical level of $p < .05$ was used for all tests conducted.

Five statistical tests were conducted. Three of the statistical tests utilized the Pearson product moment correlation: (1) correlation between teachers' implicit theories of intelligence and self-efficacy, (2) correlation between teachers' implicit theories of intelligence and students' perception of goal orientation in the classroom, (3) correlation between teachers' self-efficacy and students' perception of the classroom goal orientation. Two statistical tests utilized multiple regression analysis: (1) regression analysis examining teachers' implicit theories of intelligence and teachers' self-efficacy as a predictor of students' perception of the classroom goal orientation, and (5) regression

analysis examining students' gender and rating of ability as predictors of students' perceptions of goal orientation in the classroom.

A positive correlation was found between teachers' theories of intelligence and self-efficacy. A statistical significance was also found for the relationship between teachers' self-efficacy and their students' perceptions of the classroom goal orientation based on teachers' theories of intelligence or self-efficacy. Statistical significance was not found for students' ability rating, as a predictor of their perception of the classroom goal orientation. Statistical significance was found for gender as a predictor of students' perception of the classroom goal orientation, however, practical significance is questionable.

Several suggestions for additional research and improvement in practice with regard to teachers' belief systems and student goal structures were offered. This research provides additional data for teachers and school leaders in helping them understand the role of teachers' belief systems in fostering student achievement.

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CHAPTER 1

INTRODUCTION

Few academic issues are of greater concern to teachers, parents, and school administrators than the academic motivation of students in their care. This study is centered on secondary-level social science teachers and their students with regard to the following motivation-related topics: implicit beliefs about intelligence, self-efficacy, and goal orientation. This chapter includes (1) overview of the issues, (2) significance of the study, (3) purpose of the study, (4) limitations of the study, and (5) conclusion.

Overview of the Issues

This section includes an overview of the issues related to the study. Issues include (1) role of teachers in motivating students, (2) goal theory and achievement, (3) implicit theories of intelligence and achievement, and (4) efficacy beliefs and achievement.

In the ideal classroom, teachers would find all students eager to learn and committed to reaching their highest potential. Students would demonstrate a genuine excitement and passion in their search for knowledge and skills, and new challenges would inspire them to learn as much as possible in their effort to be successful. These students would diligently persevere when facing difficult circumstances, always knowing that sustained effort is the cornerstone of being successful in anything they pursue. Self-efficacy with regard to academic endeavors would be high, with students' attributions to success and failure realistic, and yet always providing a foundation for sustained motivation for learning and growing. Students' cognition, affect and behavior in the classroom would continuously highlight their primary goal-to learn the necessary strategies that are

required to be successful. In essence, such motivated students would possess beliefs that lead to constructive, adaptive, achievement behaviors.

Unfortunately, this scenario is the ideal classroom, and not the typical one. In many classrooms teachers experience a very different kind of student population. In reality, many students do not believe in their ability to be successful (Dweck, 1999), and the maladaptive patterns of behavior they exhibit in the classroom demonstrate a sense of helplessness and apathy about their ability to learn in general. Self-efficacy and motivation is low for such students, and reaching their potential in the classroom, and their chances for success, are indeed limited. Because of these realities, and because such beliefs have impact on student achievement, serious questions remain. In general, why do some individuals exhibit these more adaptive motivational behaviors in the classroom and others do not? More specifically, why do some students believe that they are capable of mastering tasks presented to them in the classroom, and others perceive themselves as less than capable? These are complicated motivation questions that require teachers to reflect on their personal beliefs about the self, and the impact of these beliefs on their students.

Role of Teachers in Motivating Students

Teachers assume a critical role in creating learning environments that encourage students to become motivated learners, and to be persistent in their efforts to reach their personal achievement potential. Teachers are in positions to create climates conducive to high achievement and the link between motivation and achievement is widely accepted. Eccles and Wigfield (as cited in Dusek, 1985) suggest that the link between achievement and motivation can be considered a feedback system; positive motivation brings about

achievement, which, in turn, facilitates ongoing and consistent positive motivation. Likewise, high achievement facilitates the development of positive motivation, which in turn, brings about continued high levels of achievement. Teachers who possess a deep understanding of the fundamental dynamics of both motivation and their own personal role in motivating students, find themselves in an advantageous position in creating optimum classroom environments for their students, which result in high achievement and positive affect with regard to school in general. Such effective teachers are likely to create classroom environments that promote student response to failure in adaptive and functional ways. These kinds of teachers embrace the challenge of motivating all students to learn, and hesitate to explain underachievement as behavior beyond their control and impact. Such teachers accept the challenge that each and every student in their classroom, regardless of past performance, can be successful, and their levels of teacher efficacy are high.

A clearer understanding of teachers' perceptions about students and the impact of those perceptions on student achievement hold great promise for more thoroughly addressing the motivational issues that regularly interfere with both effective teaching and sustained learning. Teachers who recognize and use effective strategies to motivate students are able to encourage even the most challenging students to be academically motivated to perform better in school, value their educational experiences, and become future-oriented. Effective teachers are able to instill in their students both the necessary confidence in their abilities, and resilience in the face of challenges and obstacles. As a consequence, students who are taught by these kinds of teachers are more likely to reach

their academic potential, pose fewer disciplinary problems for teachers, and are less likely to drop out of school.

Goal Theory and Achievement

Over 25 years of research in the area of achievement goal theory offers teachers in the classroom solid information from which to draw in understanding the nature of teacher expectations for achievement and the adaptive mechanisms/strategies that can be utilized by students to reach their potential. Achievement goal theory posits that there are two fundamental types of goals individuals tend to possess with respect to the process of learning and achievement. Rather than conceiving of students as lacking or possessing motivation to learn, achievement goal theory focuses on how students think about themselves, their tasks, and their performance in the classroom. These two goal types have been labeled mastery (learning or task) and performance goals (Elliott & Dweck, 1988). These two distinct types of orientation goals elicit qualitatively different motivational patterns in the classroom environment (Ames, 1992). Both types of goals are necessary for success in the classroom, and are present in every individual to some degree; however, individuals tend to be either mastery or performance oriented. The kinds of goals students adopt serve to provide the framework for the challenging motivation related behaviors of students that teachers work with on a daily basis. In essence, mastery and performance goals represent very different kinds of conceptions of success and failure, and different ways of approaching and engaging in achievement tasks.

Mastery goals are goals that focus on learning and challenge seeking behaviors. Mastery oriented students persist in the face of difficulty, and continuously seek to improve their understanding and learning of new information. The focus of attention for

those with mastery goals is on the intrinsic value of learning, and the importance of effort in reaching success. A mastery goal orientation lends itself to persisting in the face of difficulty, and accepting challenging learning experiences as opportunities for personal growth (Dweck, 1999).

Contrasted with mastery goals are performance goals. Central to performance goals is a focus on one's ability, and a sense of self worth (Dweck, 1986). Individuals who are oriented toward performance goals emphasize the importance of gaining favorable judgments of their competence, and are characterized by avoidance of challenge and low persistence in the face of difficulty (Dweck, 1999).

Implicit Theories of Intelligence and Achievement

It may seem plausible that children who have the highest IQ scores, achievement test scores, and classroom grades would be those students with the highest expectations for future academic performance. However likely this may seem, it is often not the case. Dweck (1999) reports that measures of a child's actual competence do not strongly predict their confidence of future attainment. In essence, the research conducted on achievement goal theory provides significant evidence that one's goal orientation is independent of ability, but very much related to perceptions of intelligence.

Dweck and colleagues (1986) have pursued the role of beliefs about intelligence and the implications of these beliefs on academic achievement patterns, for over 20 years. Dweck and Leggett (1988) demonstrated that individuals possess one of two implicit theories of intelligence (entity or incremental). Those who possess entity beliefs about intelligence view intelligence as fixed and non-changeable, and their response to failure and success reflects this belief theory. The focus is on proving oneself smart.

Incremental beliefs about intelligence, on the other hand, are focused on the idea that intelligence is not fixed, but malleable. Those who possess incremental beliefs about intelligence view themselves as capable of increasing achievement, providing they work hard and focus on learning and mastery of content and skills, rather than proving their competence. The focus for those with incremental beliefs is on getting smart, not proving they are smart (Dweck, 1999). In essence, one's theory of intelligence orients individuals toward particular goals (mastery or performance), which in turn shapes response patterns to success and failure experiences.

Goal orientation and beliefs about intelligence are fundamental to human learning processes. It is reasonable to assume that the beliefs teachers hold about intelligence, and the kinds of goals they promote in the classroom, influence their teaching practices and their students' perceptions of goal orientation. What significant differences in classroom practices are associated with teachers who hold entity beliefs about intelligence, as opposed to teachers who hold incremental beliefs? Equally important is the question, what impact might there be for students whose teachers emphasize performance goals, as opposed to learning goals, and what impact might this emphasis have on the learning environment of classrooms?

It appears as though the two goal orientations that students possess (mastery/learning vs. performance) elicit different environmental and instructional demands. The goal orientations students possess play a fundamental role in the different motivational patterns teachers observe in the classroom. Research evidence suggests that a mastery/learning goal orientation promotes motivational patterns likely to promote long-term and high-quality involvement in learning, and a performance goal orientation is

associated with the avoidance of challenging tasks following failure, accompanied by a judgement that one lacks ability (Ames, 1992). What then might be the structural elements evident in classrooms where teachers promote the salience of one goal over another?

Impact of Goal Orientation on Classroom Learning

Converging in the research literature (e.g. Good & Brophy, 2000; Meece & Blumenfeld, 1988; Stipek, 1988; Maehr & Midgley, 1991) is an identification of certain classroom structures found to impact various motivation related behaviors. These classroom structures include the design of task and learning activities, evaluation practices, the use of rewards, and the distribution of authority (Ames, 1992). Examining such structures would provide insight into the qualitative differences in classroom environments that promote either a mastery/learning or performance goal.

Efficacy Beliefs and Achievement

Just as goal orientation, as manifested in the structural elements of teachers' classrooms, and implicit beliefs about intelligence of both students and teachers play critical roles in achievement in the classroom, self-efficacy beliefs of both teachers and students are critical factors related to student motivation. Over the last 25 years, considerable research and writings have addressed the salient factors underlying academic self-efficacy, motivation, and achievement (Dweck, 1988; Ames & Archer, 1988; Ames, 1992; Covington & Omelich, 1979; Dweck, 1986; Elliott & Dweck, 1988; Pajares & Schunk, 2001; Schunk, 1991; Weiner, Heckhausen, & Meyer, 1972).

Bandura's conceptualization of self-efficacy is helpful in developing an understanding of student motivation. Behavior is regulated through the sense of self-efficacy one possesses (Bandura & Cervone, 1983). According to Bandura, self-efficacy refers to the beliefs that one possesses about how capable one is in the performance of a particular task. Those individuals who have a high degree of self-efficacy have been found to exert more effort, persevere in difficult situations and possess attributions that are realistic and adaptive towards self-improvement. Likewise, those low in self-efficacy minimize the role of effort, give up when things get tough and possess attributions that are characteristically nonrealistic and maladaptive. Such individuals tend to avoid those tasks they are not sure of, and avoid challenges in general. According to Bandura (as cited in Schunk, 1989a), self-efficacy impacts students' behaviors in multiple ways, including choice of activities, persistence, effort expenditure, and task accomplishment.

The research on self-efficacy is united in its emphasis on individual beliefs about one's capabilities and the ability to exercise control over life (Bandura & Cervone, 1983; Dweck, 1986; Schunk, 1989a; Schunk, 1991; Weiner, 1990). Individuals acquire information about their personal self-efficacy from performance accomplishments, vicarious experiences, forms of persuasion, and physiological indexes (Schunk, 1989b). Learners obtain information to appraise their self-efficacy from all of these four sources; however, students' own performances on past tasks appear to be the most reliable guides to gauge self-efficacy. Specifically, the cognitions related to past performances appear to be most critical. In the context of classrooms, self-efficacy influences both teacher and student choices of activities, persistence, effort expenditure, and task accomplishments (Bandura, 1982).

Relationships have been discovered among teachers' self-efficacy and their instructional practices. In an observational study of elementary teachers, Gibson and Dembo (1984) found that teachers with higher levels of personal self-efficacy persist longer in the presentation of lessons, providing information feedback and additional support to students who had difficulties understanding material more than teachers with lower levels of personal self-efficacy. Midgley et al. (1995) also found associations between teaching self-efficacy levels and the use of mastery-oriented practices (e.g., emphasizing effort utilization and improvement) in middle school classrooms. While these personal understandings of the self are critical to creating classrooms that inspire students to excellence, the research on teacher perceptions about students in terms of ability and self-efficacy, as well as the impact of those on classroom structures is sparse.

Significance of the Study

Although extensive research has been conducted on the implicit theory model of intelligence, most of this research has focused on the impact of those theories on students. It is well documented that students' beliefs about intelligence influence a host of academically related behaviors. Although research is available to document that teacher expectations about race, gender and SES influence teacher behaviors and student achievement, a review of the literature identifies a lack of investigation into how teachers' beliefs about intelligence impact students in the classroom.

In order to address the motivation related issues of students in the classroom, it is critical that researchers investigate the differences in teachers' implicit theories of intelligence, and how these differences relate to students' patterns of academic related behaviors in the classroom. It is especially critical to examine the relationship between

teachers' theories of intelligence and their students' perceptions of the salient goals (mastery/learning vs. performance) in the classroom. Perhaps teachers' beliefs about intelligence serve to mediate students' goal orientations; if this is the case, great potential exists for teachers to create classroom environments that encourage students to adopt adaptive motivational patterns. Furthermore, if attitudes and beliefs so powerfully influence teaching practice, it might be possible to help teachers move toward more effective teaching by examining teachers' levels of self-efficacy and how that efficacy is related to both their views about intelligence and their students' perceptions of goal orientation in the classroom. This might be possible by providing teachers with opportunities to understand their belief systems about the self and students, and consider how these beliefs influence their teaching practices (Solomon, Battistich & Hom, 1996).

Purpose of the Study

The purpose of this study was to investigate the relationship between teachers' implicit theories of intelligence and self-efficacy and their students' perceptions of the goal orientation in the classroom.

Specifically, this study investigated the nature of the relationship between teachers' implicit theories of intelligence and their self-efficacy. The two teacher belief systems were examined in relationship to their students' perceptions of goal orientations in the classroom. The relationship between students' gender and their perceptions of ability, as factors influencing perceptions of goal orientation, were also examined. This study sought to answer the following research questions:

1. Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and teacher self-efficacy?

2. Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the kind of goal orientation promoted in the classroom?
3. Is there a statistically significant relationship between teachers' self-efficacy and their students' perceptions of the kind of goal orientation promoted in the classroom?
4. Is there a statistically significant relationship between students' gender and perceived ability and students' perceptions of the kind of goal orientation promoted in the classroom?

Limitations of the Study

Participants of the study were volunteer secondary level social science teachers (N = 63) teaching in 17 high schools in northeast Kansas and students (N = 1,214) enrolled in participating teachers' classrooms. The study captured teachers' beliefs about intelligence and self-efficacy and students' perceptions of goal orientations in the classroom at one point in time. Therefore, the results are not statistically generalizable beyond the sample or the time at which the information was collected. Since the selection of the sample was purposive, the study was dependent on teachers' and students' willingness to participate. Response rates could have influenced the results.

Another limitation of this study is the fact that the responses to the survey instruments were self-reports. Response bias is a possibility in the self-reports of both teachers' beliefs about intelligence and self-efficacy. Response bias is also possible with regard to students' reports on perceptions of goal orientation in social science classrooms and self-ratings of ability. Some teachers and students may not have been comfortable

reporting honestly on items they felt were less than positive characterizations of themselves.

Conclusion

Teachers play a crucial role in creating classroom environments conducive to high levels of motivation and academic achievement. It is well documented in the educational literature that one's implicit belief about intelligence, level of self-efficacy and goal orientation impacts a range of academic-related behaviors. The current study provides valuable information to teachers and school administrators interested in addressing motivational factors related to students' success in the classroom.

CHAPTER 2

LITERATURE REVIEW

Implicit Theories of Intelligence

Humans have belief systems that provide a sense of purpose and stability in an otherwise continuously changing and often unpredictable world. Implicit beliefs help individuals form the foundation upon which they interpret life's experiences, and provide them with a framework with which to guide their behavior. In an investigation of implicit beliefs about personality traits, Heyman and Dweck (1998) found that children's beliefs in personality traits (whether traits are stable or unstable) play a critical role in how they interpret human behavior. Seven and eight-year olds' personal beliefs were assessed by responding to a series of scenarios in one-on-one interviews. Of particular interest to the researchers were the children's beliefs with regard to the notion that one's "goodness" or "badness" is likely to remain stable. Researchers termed this particular belief as sociomoral stability. Beliefs about sociomoral stability and sociomoral judgments were found to be related to both the types of information children use in making sense of social experiences and the process of generating ideas about appropriate actions to take. Researchers found that children's beliefs that traits are stable predicted a greater tendency to make trait judgments of individuals (Heyman and Dweck, 1998). This study demonstrated that early elementary school children who view personality as fixed, also have a significant tendency to be evaluative of others' personalities. Such beliefs may lead children, in social situations, to focus on the personality traits of others, instead of the processes and contextual factors that influence behavior. In an academic

context, this would likely lead to a tendency to focus on ability, and not achievement processes, in explaining success and or failure.

The influence of implicit beliefs about intelligence and the impact of those beliefs on the evaluative meanings of performance outcomes in the classroom are critical issues, worthy of investigation. The implicit theories of intelligence model (Dweck, 1999) has gained significant attention as a framework with which to conceptualize individual differences in academic related cognition, affect, and behavior. Research has demonstrated that children possess one of two implicit theories of intelligence (entity vs. incremental). This theory of intelligence, in turn, orients children toward particular goals, which in turn shape response patterns to success and failure experiences in the classroom (Dweck, 1999; Dweck & Bempechat, 1983; Dweck & Leggett, 1988). A review of the key components of each theory follows.

Entity Theory

Those who conceive intelligence as fixed and non-changeable create what Dweck suggests is an “entity theory of intelligence”. These individuals conceptualize intelligence as a fixed amount that dwells within oneself; it is viewed as an entity that one possesses a certain amount of and that cannot be increased. The chief concern of individuals who hold an entity theory of intelligence is that of “proving” one’s self smart, at all costs. Out-performing others makes entity theorists feel smart. Worrying about how much intelligence one has, and looking smart, is a primary goal. The overriding concern of those with an entity theory of intelligence, then, is to prove this smartness by choosing tasks that do not call one’s own intellectual ability into question (Dweck, 1999). Challenges are carefully monitored by entity theorists to avoid the threatening possibility

of not being able to measure up; hence, easier tasks are the preferred choices, and disengaging from difficult and challenging tasks is the norm (Dweck, 1999). In essence, a student with an entity belief system of intelligence views attributes of people and self as fixed and uncontrollable. These students tend to have goals that focus primarily on performing and demonstrating their abilities in relation to others (Dweck, 1988). Furthermore, entity theorists have been shown to be more concerned with “not making mistakes,” as well as with “how smart a teacher (or adult) who saw your work thinks you are” (Dweck & Bempechat, 1983). In addition, Stipek and Gralinski (1996) found that students with entity orientations were prone to using superficial strategies in the classroom (guessing, copying, and focusing only on material that has to be memorized). These kinds of cognitive strategies enable students to complete academic work, but do not necessarily contribute to their understanding of the content being studied.

Incremental Theory

While the entity theorist views intelligence as stable, fixed, and permanent, the incremental theorist views intellectual ability as unstable, dynamic, and malleable. Students who hold an incremental view of intelligence perceive their intellectual ability as something that can be increased and cultivated with time and sustained effort (Dweck, 1999). Effort is perceived as a good thing, something one simply has to be willing to expend for success to occur. Students with this view of ability do not spend time worrying about how much intelligence they possess or “being smart.” Instead, those with an incremental belief about intelligence persist in the face of obstacles, and feel the smartest when they are being challenged beyond their current achievement level and are engaged in the academic task at hand. Incremental theorists prefer classroom experiences

that will challenge their current skills and knowledge levels. The focus for incremental students is on stretching their current abilities, and meeting the challenges that learning opportunities in the classroom provide, with a sense of determination and the belief in their ability to be successful with sustained effort and perseverance. Furthermore, incremental theorists' primary goal is to increase competence (become smarter). These kinds of students would not be likely to shy away from difficult academic opportunities, but instead would exhibit enthusiasm for the task at hand, and approach new challenges with a sense of adventure and excitement (Dweck, 1999). Students with this orientation report they would be bored or disappointed if problems were easy and required little effort (Dweck & Bempechat, 1983).

Dweck's theory provides insight for understanding why different attributions and explanatory styles occur among individuals. Specifically, the cognitive processes of individuals with either an entity or incremental theory of intelligence can be viewed in relationship to the stability and control dimensions of attribution theory. Attribution theory attempts to provide explanations for how people make sense of their world (Weiner, et al., 1972); a basic assumption of attribution theory is that individuals seek to explain the causes of important events in their lives. Attribution theory suggests that students are motivated to explain their personal experiences in the classroom, and often attribute success and failure to such factors as ability, effort, task difficulty and luck (Schunk, 1989b). There is significant overlap between Dweck's implicit theory of intelligence and attribution theory's classification of ability along the stability dimension (Graham, 1991). Although attributions and attributional styles are a central part of Dweck's model, they are seen as existing within the context of people's self theories and

goals (Dweck, 1999). In essence, Dweck suggests that an individual's theory of intelligence (entity vs. incremental) provides the framework from which many attributions will be made. This framework exists by middle to late grade school, as children then understand aspects of both theories, but tend to focus on one in thinking about intelligence (Dweck & Bempechat, 1983).

The question remains, how does one's implicit theory of intelligence influence academic-related cognition, affect, and behavior? It is reasonable to suggest that students who possess an entity theory of intelligence are at a distinct disadvantage with regard to the necessary motivational processes for being successful in the classroom. Reaching one's academic potential requires the ability to take academic risks, and a serious willingness to challenge oneself in order to move beyond one's current ability level. Likewise, since obstacles are certain in any academic setting, one's belief in the ability to surpass those obstacles and to move beyond them, is essential in order to reach one's highest level of academic achievement. Possessing an incremental view of intelligence would give students the necessary motivational skills that would allow them to transcend difficulty and failure, in order to achieve maximum personal learning and academic growth.

Patterns of Response to Failure

How one responds to failure is ultimately connected to the theory of intelligence one embraces (Dweck & Leggett, 1988). Particular patterns of cognition, affect, and behavior characterize either an adaptive/mastery-oriented or maladaptive/helpless response pattern to obstacles and or failures. Each of these two major response patterns

have striking characteristics, and result in dramatic differences in individuals' responses to difficulties and failure, regardless of ability level (Dweck, 1999).

These two major, and significantly different, patterns of response were revealed in a series of experimental studies conducted with elementary children (Deiner & Dweck, 1978). Late grade school aged children (5th and 6th grade) were identified as having either an adaptive/mastery oriented or maladaptive/helpless response pattern to obstacles and failures by use of an attributional measure. In these experimental studies, students' patterns of response to failure were measured by administering a questionnaire to the students prior to the experiment, with the intent of predicting their individual responses to failure (helpless or mastery). After students' response patterns were measured, they were then asked to solve various kinds of conceptual problems. All of the children could easily solve the first eight problems (success trials), which were of appropriate difficulty level for their ages, but the four subsequent problems (failure trials) were too difficult for the students to solve successfully. Researchers carefully observed and monitored the individual students' reactions to the sudden obstacles created by the difficult problems by recording their thoughts, feelings, and actions, and by tracking specific changes in each of the above. Two dramatic reaction patterns to the obstacles surfaced in the children's responses: (a) helpless pattern, and (b) mastery-oriented pattern.

Helpless Pattern: A Maladaptive Response

A helpless pattern of responses to failure was demonstrated with a number of cognitive, affective and behavioral characteristics. Even though moments before their failures these students had experienced success in solving the problems presented to them, they quickly lost faith in themselves by denigrating their abilities and blaming their

intelligence for the failures. Students characterized as having a helpless response pattern said things like “I guess I’m not very smart”, “I never did have a good memory”, and “I’m no good at things like this.” (Dweck, 1999). Furthermore, when asked by the researchers if they thought they could now solve the same problems they had successfully solved earlier, over a third of the children reported they did not believe they could (Dweck, 1999). Students with this helpless pattern of response misjudged how many problems they had actually solved correctly. In fact, they thought they had more failures than they actually did. These students expressed significant negative affect, which seemed to adversely influence their ability to problem-solve thereafter. In fact, two thirds of these students demonstrated clear deterioration of their use of problem-solving strategies after experiencing failure (Dweck, 1999).

Mastery-Oriented Pattern: An Adaptive Response

In the study described above, mastery-oriented response individuals responded to the obstacles and failure in dramatically different ways. When these individuals experienced failure, they didn’t blame anything, not even their intelligence or abilities. In fact, these students didn’t focus on a reason for failure at all, but instead began to give themselves self-instructions for improvement. These self-instructions served as self-motivators to improve themselves and work harder. These mastery oriented students “dug in” more vigorously, and remained confident in their abilities to be successful on additional conceptual tasks. Positive affective responses included such statements as “I love a challenge”, and “The harder it gets, the harder I need to try” (Dweck, 1999). More than 80 percent of these students maintained or improved the quality of their strategies during the difficult problems, and seemed to recognize that additional effort was

necessary for success at the challenging tasks (Dweck, 1999). The mastery oriented students' sense of personal efficacy with regard to future conceptual problem solving appeared strong.

The results of the Deiner and Dweck study revealed that helpless children made attributions for failure to lack of ability. On the other hand, mastery oriented children self-monitored and self-instructed with the intention of improving their abilities. The focus for mastery oriented individuals was on finding remedies for future problem solving tasks (Deiner & Dweck, 1978). While the Deiner and Dweck study demonstrated significant differences between mastery oriented and helpless oriented children in laboratory settings, other studies have examined these same response patterns and their effects in actual classrooms.

In a study conducted by Licht and Dweck (1984), researchers found that a helpless response pattern affects students' learning in the actual classroom setting. Fifth grade students were first identified by a questionnaire as being either mastery or helpless oriented, and then were tested on their learning following presentation of confusing reading material. Researchers found that those who had a helpless orientation were negatively affected by a confusing passage of material, whereas those students identified as mastery oriented were not. The presentation of confusing information seemed to adversely affect the learning of unrelated material for those students with a helpless response pattern. As this study suggests, both mastery and helpless patterns of response are related to differential kinds of impact on student learning in the classroom environment.

Research (Licht & Dweck, 1984; Deiner & Dweck, 1978) has clearly documented the adaptive (mastery oriented) response pattern as characterized by persistence in the face of obstacles, challenge seeking, and enjoyment in exerting effort. In contrast, the maladaptive (helpless) response pattern is characterized by avoidance of challenge, disengagement when challenges threaten the self, and low persistence and anxiety in the face of obstacles (Dweck, 1986). Because these patterns of response, and consequent affect, cognitions and behaviors associated with them, have been found in individuals at various age levels regardless of intellectual ability, a significant question remains. If not ability, what forms the basis for these response patterns to challenging circumstances? Why is it that some individuals respond to setbacks and failure in a maladaptive (helpless) way, and others respond in an adaptive (mastery-oriented) way?

Student Goal Orientation

Dweck & Leggett (1988) proposed that the nature of the goals individuals pursue create the framework for their interpretation of, and reaction to, events. They identified two kinds of goals related to the academic achievement domain: learning and performance goals. Contrasted by other researchers as task vs. ego, and mastery vs. ability goals (Ames & Archer, 1988), learning and performance goals focus on very different aspects of the learning experience. Student goal orientation can be seen as the lens through which individuals make sense of their academic experiences.

Dweck and colleagues suggest that students' goal orientations may very well develop in response to the implicit theory they hold about intelligence; entity theorists adopt performance goals, and incremental theorists adopt learning goals (Dweck & Leggett, 1988). It is important to recognize that the extent to which any student adopts

either a performance or learning goal is dependent on a number of key factors. Indeed, how students construct the social reality of the classroom is tied to the influences from home environments, prior experiences, and differential treatment from teachers (Ames & Archer, 1988). Nonetheless, considerable research supports the roles of student goal orientation and belief about intelligence in academic achievement.

Performance Goal Orientation

For students with a performance goal orientation, there appears to be an underlying concern with being judged able. The focus is on the desire to do better than others, and to prove one's competence with little or no effort. Little desire to improve the understanding of information and or skills is evident. For those with performance goals, success depends on receiving high grades, and one's own performance is viewed as relative to others' (Ames & Archer, 1988).

Learning Goal Orientation

Those who possess what Dweck referred to as learning goals possess a desire to increase knowledge and understanding of a topic, regardless of their performance. Improving one's competence, developing new skills, appreciating and enjoying the process of learning, and attaining mastery is seen as dependent on the level of effort exerted. Those with learning goals have a strong sense of personal efficacy that is based on the belief that effort will lead to success or mastery (Ames, 1988) and that pride and satisfaction are associated with successful effort.

Goal Orientation in Classroom Settings

Much of the research on goal orientation and motivational processes has come from laboratory studies (Dweck, 1988), primarily with elementary students, and not from research in ongoing classroom settings (Ames & Archer, 1988). Ames and Archer (1988) found that mastery (learning) and performance goals provide meaning to junior high/high school academically advanced students' varying perceptions of a classroom learning environment. When students viewed their class as emphasizing a learning goal, they were much more likely to report the use of effective learning strategies, prefer challenging tasks, like their class more, and have a stronger belief that effort and success co-vary (Ames & Archer, 1988).

Although Dweck (1988) suggested that a student's perception of ability underlies a motivation or willingness to use learning strategies, a mastery (learning) goal orientation, as promoted by the teacher in the classroom, may indeed override the contribution of perceived ability to achievement behaviors (Ames & Archer, 1988). This possibility holds great promise for teachers who desire to encourage mastery/learning goals in their students. In essence, teachers may very well be able to redirect their students' existing beliefs about ability and goal orientation, and, therefore increase their students' achievement outcomes in the classroom.

The impact of goal orientation on student achievement has been demonstrated with college age students, as well as with elementary and junior high/high school age students. Achievement outcomes were investigated in a factor analysis conducted of college age students' academic goal orientations in an introductory college class (Schraw, Horn, Thorndike-Christ, & Bruning, 1995). Researchers found students were indeed characterized by two independent goal orientations: mastery/learning and performance.

These goal orientations appeared to be directly related to differences in students' achievement and strategy use. Schraw found that students with a strong mastery/learning orientation not only were higher achievers in an introductory college class, but they also engaged in a greater number of adaptive behaviors. These adaptive behaviors included focusing on one's efforts to gain knowledge, using a greater number of problem-solving strategies, using the strategies more frequently, and possessing greater meta cognitive awareness. In general, higher achievement in an introductory college class appeared to be attributed to a mastery/learning orientation, and not a performance orientation (Schraw et al., 1995).

Although both mastery/learning and performance goals are normal and universal, often they appear to be in direct conflict with one another. Many classroom environments emphasize performance goals, and teachers frequently communicate their importance to students on a regular basis. In effect, many classrooms and school experiences act to undermine an individuals' sense of self worth because of a focus on ability and performance (Alderman, 1999). Because the focus on performance goals is on ability and normative performance, students with a low self-concept of ability are especially vulnerable in classrooms that emphasize performance goals (Ames, 1992).

Self-Worth Theory

For many students, protecting self-esteem is of critical importance and anything that might threaten it is avoided at all costs, including a challenging task. A self-worth theory of achievement behavior proposed by Covington and Omelich (1979) emphasizes the importance for students to maintain a self-concept of high ability. Covington's self-worth theory holds that achievement behavior is largely based on an individual's attempts

to maintain self-esteem with regard to ability, particularly when risking failure. Therefore, because failure is perceived as indicative of lowered ability, tasks that call ability into question are to be avoided (Covington & Omelich, 1979). Self-worth theory is based on two widely held beliefs. The first belief is that we tend to equate ability to achieve with human value. The second belief is that whenever possible, individuals try to maximize success and avoid failure (Covington & Omelich, 1979). Excessive emphasis on the importance of performance goals can minimize the value of mastery/learning goals, leading students to avoid learning opportunities that appear risky in order to protect self-esteem. Covington's self-worth theory provides a conceptual framework for understanding the discrepancy that often exists between teachers' and students' perspectives with regard to effort. Students are often not willing to expend the effort, despite clear rewards from teachers for trying, because of the need to protect self-worth. Students attempt to maintain a self-concept of high ability by not trying, because trying and failing implies inability (Covington & Omelich, 1979).

In addition to minimizing mastery/learning goals to protect self-esteem, an over-emphasis on performance goals in the classroom has been shown to actually foster a helpless response in the face of obstacles (Dweck, Goetz, & Strauss, 1980). Elliott and Dweck (1988) demonstrated that performance and mastery/learning goals could directly create helpless and mastery oriented responses respectively. The researchers gave fifth-grade students either a performance or a mastery/learning goal. The students who were given the performance goals were specifically told that their ability would be evaluated based on their performance on the task. Students who were given the mastery/learning goal were told the following: "The task will offer you an opportunity to learn some

valuable things but you will likely make some mistakes, become confused, and feel a little dumb at times” (Elliott & Dweck, 1988).

Hence, whereas all of the students in the study received the same identical task, some students approached the task with a performance goal, and others approached the task with a mastery/learning goal. The task began with a series of easy successes, and the two goal groups performed equally well. Thereafter, the students were then presented with several very difficult problems to solve. The researchers found that those with performance goals showed a clear helpless pattern to the difficult problems. These students condemned their ability, and a deterioration of their problem solving strategies followed. In contrast, most students with the mastery/learning goals showed a clear mastery orientation pattern. They demonstrated a focused sense of determination, and increased effort in solving the difficult tasks (Elliott & Dweck, 1988). This study provides evidence that the kinds of goals students hold are powerful predictors of achievement patterns in general, and that these goals can actually create the very response patterns students exhibit when confronting situations involving challenge and failure.

Goal Orientation and Implicit Beliefs About Intelligence

Just as goals and response patterns are linked, so are goals (mastery/learning or performance) and theories of intelligence (incremental or entity). Bandura and Dweck (Dweck, 1999) measured eighth graders’ theories of intelligence. Theory of intelligence was measured by having the students agree or disagree with statements such as the following: “Your intelligence is something about you that you can’t change very much.” and “You can learn new things but you can’t really change your basic intelligence”. After identifying the students’ theories of intelligence, the researchers then gave the

students tasks to choose from (mastery/learning or performance tasks). Greater than 80 percent of the students with an entity theory of intelligence chose a performance goal task, when given the choice. In fact, 50 percent of the entity theorists chose the very easy task. The majority of incremental theorists (over 60%) chose the mastery/learning goal task, despite its challenge and associated risk. In essence, the type of goal students preferred was predictable based on their theory of intelligence (Dweck, 1999).

A similar relationship between type of goal and theory of intelligence was found in a study with college students. College students reacted similarly as identified in a study by Mueller and Dweck (Dweck, 1999). Researchers examined college students with different theories of intelligence. They found that those identified as entity theorists agreed significantly more with statements such as, “Although I hate to admit it, I sometimes would rather do well in a class than learn a lot.” and “If I knew I wasn’t going to do well at a task, I probably wouldn’t do it even if I might learn a lot from it.” Entity theorists chose statements that reflected performance goals. Incremental theorists agreed more significantly with statements like; “It’s much more important for me to learn things in my classes than it is to get the best grades: and “If I had to choose between getting a good grade and being challenged, I would choose...” Students then circled either “good grade” or “being challenged”. Most of the incremental students (68%) chose being challenged; and only 35 percent of the entity theorists wanted a challenge, the rest chose the good grade (Dweck, 1999). Therefore, for college, as well as grade school aged students, there appears to be a direct relationship between the choice of either a performance or mastery/learning goal, and the implicit theory of intelligence one possesses.

Goal Orientation and Efficacy

The choice of goal one endorses (mastery/learning or performance), as well as the implicit theory of intelligence (incremental or entity) one accepts, is directly related to personal efficacy and decision-making skills. This relationship was demonstrated in research that investigated personal efficacy, complex decision-making skills, and goal setting (Wood & Bandura, 1989). Researchers investigated the role of one's perception of ability on the approach to complex decision-making tasks. Construing ability as an acquirable skill fostered a highly resilient sense of personal efficacy. Subjects who viewed ability as an entity demonstrated reduced levels of efficiency in completion of the task, and set their personal goals lower than those who conceived of ability as incremental. Subjects who possessed an entity view of ability reported lower levels of self-efficacy when asked to perform complex decision making tasks (Wood & Bandura, 1989).

Goal Orientation and the Meaning of Effort

As discussed in a previous section of this review, students' responses to failure are varied, and ultimately connected to their beliefs about intelligence, response patterns to obstacles and failures, and their choices for either mastery/learning or performance goals. For the entity theorist, failure is a sign of inability and is something to be shameful of and avoided at all costs. The entity theorist prefers easy successes, and academic related risk taking is avoided. Working hard at something, and then failing, is indicative of not being intelligent and hence, demoralizing to the individual. Incremental theorists, instead, view failure as an opportunity for stretching one's abilities and represents a personal challenge to work even harder and persevere until mastery is accomplished.

Like failure (Dweck, 1999), one's perception and value of effort is related to academic achievement patterns exhibited in the classroom. While hard work and a strong work ethic are cultural values promoted and endorsed in virtually all areas of American life, they are especially emphasized by teachers in the classroom. It is widely accepted, by both teachers and parents, that while not everyone is brilliant, everyone can exert effort and this expenditure of effort indicates a willingness to improve oneself and seek success. Teachers often communicate to their students that it is in their best interest to work hard, and that successful outcomes are based on sustained effort to the task at hand. Even so, many teachers experience the frustration of not being able to get their brightest students in their classroom to expend the necessary effort to achieve success. Frequently, this frustration exists because those students who would benefit the most from valuing effort simply do not.

Early work by Weiner (as cited in Covington & Omelich, 1979), highlighted the importance of this work ethic in teachers' value systems. Students who were perceived as having expended effort were rewarded more in success, and punished less in failure than those who did not try. This evaluation of students appeared independent of student ability level. Whereas effort is certainly valued, and often rewarded by teachers in the classroom, it is not always perceived by students as equally critical in the attainment of academic achievement in the classroom.

Effort: Entity vs. Incremental Views

Leggett and Dweck (as reported in Dweck, 1999) conducted a study to investigate the nature of effort and its relationship to students' views about intelligence and goal choice. Researchers measured both eighth graders' intelligence theories and preference

for either mastery/learning or performance goals. Students then were asked to agree or disagree with statements that would indicate the nature of their perceptions with regard to the role of effort in success in the classroom. Statements that portrayed effort as a positive concept, where exerting effort activates ability to do something and helps one reach his/her full potential on a task, included: “When something comes easily to you, you don’t know how good you are at it”, and “Even geniuses have to work hard for their discoveries.” Other statements presented to the eighth graders portrayed effort as a negative concept, indicating that effort implies inability or low ability. These statements included the following: “If you have to work hard on some problems, you’re probably not very good at them” and “You only know you’re good at something when it comes easily to you.”

Researchers found a strong relationship between students’ theories of intelligence, goal choice, and view of effort. In general, those students who were identified as entity theorists and performance goal oriented endorsed the negative statements as posed above (Dweck, 1999). For these students, having to work hard at something meant you were not good at it; and if you are good at something, you shouldn’t need effort.

Mueller and Dweck (as cited in Dweck, 1999) also found that college students’ views of effort were related to their beliefs about intelligence and goal orientation. College students with an incremental view of intelligence were more likely to disagree with the following statements about effort than entity students: “If you’re really good at something you shouldn’t have to work very hard to do well in that area” and “I sometimes feel that the more effort you have to put into your school assignments, the less intelligent you probably are.”

For those individuals with an entity orientation, effort has a limited potential for increasing ability; it is not seen as playing a crucial role in success. And, under certain circumstances, effort can undermine one's image of being capable, because ability and effort are assumed to be inversely related (Stipek, 2002). These individuals are most vulnerable to the challenges that come with difficulties in the classroom context. Likewise, entity theorists are not likely to maintain a sense of self-efficacy or increase their self-efficacy over time as learning proceeds (Stipek, 2002). It would seem that those students with effort attributions for learning generally would be more effective in the classroom because effort attributions have positive implications for future performance. Although students come to the classroom with their own views toward learning (including beliefs about intelligence, goal focus and perception of effort), teachers can, and do, play a significant role in influencing students' beliefs about themselves and their capability for success. The impact of teachers' expectations about students on learning and academic performance is worthy of examination.

Teacher Expectations Research

It is widely accepted that the single most important factor affecting student achievement is the classroom teacher. Teachers' expectations and attitudes about students can lead to treating students differently, sometimes producing self-fulfilling prophecy effects; such teacher expectations can become self-sustaining and affect both teachers' and students' perception and interpretation of events in the classroom. Research on teacher expectancies in the classroom provides valuable insight into the role of teacher beliefs and expectations on student motivation and academic achievement (Good & Brophy, 2000).

Teachers create classroom environments that either promote or inhibit student learning. And, while many factors play a role in students' motivational patterns and dispositions toward learning, for students to receive the most benefit from their school experiences, educators must create classrooms that enhance students' motivation to learn. Often, teachers' beliefs serve as filters through which students' learning takes place.

Teacher beliefs are multifaceted constructs that no doubt reciprocally influence one another. Teachers, like all individuals, rely on their personal perceptions of reality, whether accurate or not, to guide their behaviors in the classroom. Even so, teachers must become aware of the impact of these beliefs on their students if they are to help their students succeed in the classroom.

The publication of Rosenthal and Jacobson's 1968 classic study was one of the earliest attempts to address the role of teachers' beliefs and expectations on student achievement. In this study (as cited in Stipek, 1988), elementary school teachers were led to believe that some of their students in their class had exceedingly high potential for academic success. The students had actually been selected randomly; however, several months later these same students showed greater gains in IQ than other students in their grade did. The causal inference made following this original study was that teachers' expectations of students' abilities directly influenced their behaviors toward students in the classroom, resulting in higher achievement in those students identified as likely to show high potential for academic success. Although this early study was controversial (several methodological problems were raised with the original study), it did shed light on the very important role that teacher beliefs have on student achievement (Dusek, 1985).

Since the Rosenthal study, a preponderance of research has been conducted highlighting the importance of teacher perceptions of students, and the impact of those perceptions on student achievement. Much of this research has focused on the impact of teacher beliefs with regard to self-efficacy, race, gender and socioeconomic status. A brief review of some of the more significant findings with regard to teacher expectation beliefs, and the impact of those beliefs on student achievement, follows.

Teacher Efficacy

Today's teachers have a great deal of motivation-related research to draw from in creating classroom environments that encourage students to be autonomous, self-confident, and learning oriented. A significant aspect of this classroom environment is the teacher's own sense of self-efficacy with regard to the ability to motivate and teach their students in the classroom.

The importance of self-efficacy in motivating adult learners was demonstrated in research that investigated personal efficacy and its relationship to complex decision-making skills and goal setting. Personal efficacy was identified as directly related to perception of ability in research conducted by Wood and Bandura (1989). Researchers investigated the role of one's conception of ability on the approach to complex decision making tasks. Subjects (average age was 26 years) participated in an experiment whereby they served as managerial decision-makers in a simulated organization. Researchers concluded that in organizational milieus, low perceived self-efficacy fostered attributions of blame and deficiencies. Subjects who viewed ability as an entity demonstrated reduced levels of efficiency in completion of tasks, and set their personal goals lower than those who conceived of ability as incremental. In contrast, construing

ability as an acquirable skill fostered a highly resilient sense of perceived self-efficacy. In essence, perceived self-efficacy with regard to the complex decision making task was lower for those subjects with the entity view of ability.

The research on teacher self-efficacy has pointed to efficacy as a significant factor in accounting for individual differences in teaching effectiveness (Gibson & Dembo, 1984). Teachers who possess a high level of self-efficacy believe in their ability to help students in their class succeed, regardless of home circumstances or skills upon entering the classroom (Stipek, 2002). Teachers' efficacy beliefs have been found to be directly related to their instructional practices and to various student outcomes (Pajares & Schunk, 2001). Unconfident teachers tend to hold a custodial orientation in the classroom, which is pessimistic with regard to their views of students' motivation. Such teachers emphasize rigid control of classroom behavior and rely on extrinsic inducements and negative sanctions to motivate students. Unconfident teachers are often skeptical not only of their own abilities, but also of the abilities of their students and colleagues.

Confident teachers create mastery experiences for their students, whereas those with low instructional efficacy undermine students' cognitive development as well as students' judgments of their own capabilities (Pajares & Schunk, 2001). In essence, teachers with high levels of self-efficacy create conditions in the classroom for students to believe in their capacity to learn and achieve high levels of academic success.

Race

Assumptions and beliefs about a student's race can lead teachers to think and feel particular ways about their students in the classroom, often limiting students' own ideas about their ability (Streitmatter, 1994). There is solid evidence suggesting that teachers'

expectations for students in the classroom are influenced by the race of the student.

Baron, Tom and Cooper (as cited in Dusek, 1985) examined the teacher expectations of students of different racial categories by conducting a meta-analysis of sixteen experimental studies. The researchers concluded that teachers have higher expectations for white than for black students. The sixteen studies involved the random assignment of teachers to stimulus students with the intent of identifying specific student characteristics for comparison purposes. The student characteristics measured in these studies included such variables as academic performance, academic ability, intelligence, expected quality of work, and grades. Ten of the 16 studies employed between-subjects designs in which each teacher or role-playing teacher evaluated only one student. In the other six studies, each teacher evaluated more than one student in a repeated measures format. Seven studies presented the stimulus student to teachers through written descriptions only; students were verbally described in a package of written materials. The race of students was manipulated by using photographs in four studies, and two studies used videotaped stimulus students. One study used audiotape, allowing for manipulation of race by varying the dialect of the speaker. One study used actual black and white students who served as confederates in the experiment. Of the 16 studies, nine reported that teacher expectations favored white students. One study reported black students were expected to perform better than whites. Such studies provide evidence that teachers do express higher expectations for white children, even when all other relevant variables are the same (Dusek, 1985).

Pigott and Cowen (2000) found that a child's race was, in fact, the strongest determinant of both African-American and white teachers' judgements of students.

Teachers were asked to rate children's (kindergarten through 5th grade) school adjustment, focusing on such things as classroom competencies, class problems, personality characteristics (positive and negative), and academic progress. African-American children were judged by both groups to have more serious school adjustment problems, fewer competencies, more negatively stereotypic personality qualities, and poorer educational prognoses than white children (Pigott & Cowen, 2000). In a related study, Chunn, Rowser, and Jeter (as cited in Pigott & Cowen, 2000) found that teachers with lower expectations for African-American students invest less time with them, provide fewer opportunities for their involvement, and offer less encouragement for their efforts.

Gender

Gender, like race, has been shown to significantly affect teachers' beliefs and expectations about students. In an early investigation by Palardy (as cited in Stipek, 1988), first grade teachers' beliefs about the role of gender were examined. Teachers were identified as either having beliefs that boys could, or could not, learn to read as successfully as girls. All students, regardless of gender, were comparable in reading readiness scores taken early in the school year. However, by the end of the year, boys in those classrooms in which teachers believed, and expected, girls to read better than boys, actually performed more poorly on reading achievement tests than girls. In those classrooms where teachers held beliefs that boys and girls are equally capable of reading successfully, no difference in reading achievement was found (Stipek, 1988).

If teachers believe that boys and girls have different innately determined abilities and ways of thinking and learning, they are likely to develop gender differentiated

teaching practices (Streitmatter, 1994). For example, numerous studies have demonstrated that gender expectations result in teachers praising males more than females for intellectual ability. Teachers tend to give girls feedback that tends to focus on neatness and form of work. Teacher criticism for males tends to focus on the need for increased effort, and for females the focus is on lack of academic or intellectual ability. Furthermore, teachers are more likely to ask boys, than girls, questions that require higher levels of thinking (Streitmatter, 1994). Even though such perceptions and behaviors are unintentional and unconscious, these practices create gender bias in subtle, potentially dangerous ways, creating qualitatively different learning experiences for children based on gender.

Researchers appear to support the notion that beliefs are an important area of investigation for those interested in gender issues. One area of academics that has received a great deal of attention has been the area of mathematics. Studies have found that teachers tend to stereotype mathematics as a male domain. In a review of the literature related to gender issues and teachers' beliefs regarding mathematics education (Li, 1999), Li concluded that the available literature to date points to the fact that teachers have very different beliefs about male and female students when it comes to mathematics. This is reflected in the tendency of teachers to overrate male students' mathematical ability, having higher expectations for male students and more positive attitudes toward male students in general.

In a study conducted by Fennema in 1990 (as cited in Li, 1999), subjects consisted of 38 first grade female teachers in 24 schools in the USA. The teachers were asked to identify the most and least successful students in mathematics, to attribute causation of

these students' successes and failure, and to describe their characteristics. The researcher then compared the mathematics test scores of the choices made by teachers. After carefully analyzing the data, the researchers found that teachers' beliefs about male and female students in mathematics were different. Teachers perceived male students as being their best students, and were most inaccurate when selecting the most successful male students. Furthermore, teachers attributed the successes of male students more often to ability, than they did for female students. Female students' successes were more often described in terms of effort. In addition, teachers have been found to view their male students, as compared to female students, as more competitive, more logical, and more adventurous (Li, 1999).

SES

Like efficacy, race, and gender, teachers' attitudes and beliefs are also related to students' socioeconomic status. In a study conducted by Solomon, et al. (1996) involving over 400 regular elementary school classroom teachers (Grades K-6), teachers' attitudes and perceptions were assessed with a teacher questionnaire providing information about teacher beliefs with regard to the importance of teacher authority, control ideology, skepticism regarding students' learning potential, the importance of student self-direction, exploration, collaboration, and understanding, and trust in students. These attitudes and beliefs were examined and compared to classroom observations in schools from various SES backgrounds. Teachers in schools serving students from economically disadvantaged backgrounds had significantly different beliefs with regard to the above variables (Solomon, et al., 1996). Teachers' beliefs were found not only to vary with SES population, but these beliefs were consistent with their instructional practices when

observed directly by the researchers. Significant results were found indicating that teachers in high poverty schools tended to be more skeptical of student learning potential, even when actual achievement scores were controlled for, put less stock in constructivist approaches to teaching and learning, and to be less trusting of students (Solomon, et al., 1996).

If teacher expectations with regard to such variables as efficacy, race, gender, and socioeconomic status influence the practices of teachers and achievement of students in the classroom, it is reasonable to expect that teachers' beliefs about intelligence have the same potential for impact on students.

Teacher Beliefs: Theories of Intelligence

It has been well documented that a student's belief system about intelligence influences his/her perception of effort, praise, and goal orientation, as well as response patterns to difficulty and failure. It seems reasonable that one considers how teachers' own implicit theories of intelligence might influence the classroom environment they create. Just as teachers' beliefs about their own self-efficacy and students' race, gender and socioeconomic status affect teacher and student academic-related behaviors, there are possible consequences for student achievement behavior as it relates to teachers' theories of intelligence. How do teachers communicate to their students what it means to be intelligent? More specifically, if students' implicit theories of intelligence influence the goals they seek (mastery/learning or performance), and persistence in the pursuit of them (Dweck & Bempechat, 1983), it is imperative that researchers consider those conditions in the classroom that may foster the different conceptions of intelligence.

The literature reviewed in this paper provides insight into the role of implicit theories of intelligence for students in the classroom. These same theories of intelligence may also shape the specific practices of teachers in their classrooms and create particular kinds of classroom environments. For example, how do entity teachers differ from incremental teachers in the types of tasks they ask students to perform? How does instructional feedback given to students relate to the teacher's view of ability and intelligence? How do teachers' views about effort impact students' views about the value of effort? Are mastery/learning goals more likely to be promoted by incremental teachers and performance goals by entity teachers? The answers to these questions are primary in helping teachers create classrooms that are conducive to high levels of motivation and learning. Applying what is already known about students' beliefs about intelligence and the consequent academic related behaviors associated with those beliefs to the teachers themselves might be helpful here.

The Entity Teacher: Classroom Implications

Teachers themselves have implicit theories that guide their teaching practices. This has been made evident with regard to race, self-efficacy, gender, and socioeconomic factors. Teachers (entity theorists) who define intelligence as a trait that a child possesses are likely to categorize students, for example, as smart, average or not smart (Dweck & Bempechat, 1983). Categorizing students as such may lead to preconceived notions about the capabilities of students to learn, benefit from effort, and achieve academic success. Furthermore, teachers with an entity theory of intelligence have been shown to render judgements more quickly on the basis of initial or preliminary performance, and to not change their judgements easily in the face of contradictory evidence (Stipek, 2002).

Therefore, once these kinds of teachers categorize students, it may be very difficult, if not impossible, for them to modify those judgements.

Entity type teachers may be prone to filling students in their classrooms with success and shielding them from errors (Dweck & Bempechat, 1983). The goal may be to provide those students who are particularly not deemed as competent and or capable, with an accumulation of easy successes and few, if any, failures. Although the intention may very well be to protect those children who appear vulnerable from not feeling incompetent, there are serious consequences for students who are exposed to an easy diet of successes. Programmed success has been shown to be ineffective in promoting persistence and to foster greater debilitation in the face of obstacles (Dweck, 1999). If teachers create classroom environments where children are protected from failures, children will not be ready for failure in the future. Furthermore, some of the “less bright” students may come to label themselves as failures because they are assigned easy work or praised for work that is not particularly noteworthy (Dweck & Bempechat, 1983).

If teachers fail to convey that they themselves, as well as all students, can overcome difficulties, then those same teachers are unlikely to model the strategies for doing so. The common sense idea of programming students for success is not conducive to encouraging students to invest effort in the face of challenge, and a steady diet of success will not change an established pattern of learned helplessness (Good & Brophy, 2000). It appears as though controlled exposure to failure can be valuable for students, as it provides the necessary context for learning that working hard and persevering in the face of academic difficulty is useful and indeed necessary for long-term success.

Incremental teachers would likely approach the classroom in ways that promote the belief that success is a result of not ability, but sustained effort. Incremental teachers would be likely to create environments in their classrooms where the process of mastery and learning of content and skills is more valued than the products of performance. Hence, incremental teachers would be likely to promote mastery/learning goals over performance goals. Students in these kinds of classrooms would be encouraged to value and enjoy the process of learning, and view challenges as opportunities for growth and improvement.

Incremental teachers would be likely to create lessons that challenge all children on long-term tasks requiring planning and persistence. These kinds of teachers would model and guide the process of learning with their students. In fact, incremental teachers may very well show a reverse teacher expectancy effect, with the less proficient children receiving more attention and showing greater gains (Dweck & Bempechat, 1983). In sum, teachers with an incremental orientation would likely view every child's intelligence as an ever growing quality that is increased through the child's own efforts. Teachers who view intelligence with this incremental orientation would be more likely to create classroom environments that promote adaptive motivational patterns that lead to both high levels of confidence and achievement in their students.

Importance of Proposed Research

Teachers have the primary responsibility in education to cultivate the personal qualities of motivation in their students. Although this is not an easy task by any means, it is one that demands a willingness of teachers to reflect on personal beliefs that shape everyday interactions with students. If we consider how teachers' implicit theories of

intelligence and self-efficacy interact with their students' goal orientations, we may begin to uncover the ways in which teachers might help students choose adaptive, motivational strategies for reaching their academic potential. Helping teachers become more aware of their personal belief systems with regard to intelligence and self-efficacy may very well be the most important factor in creating the ideal classroom described early in this review.

This review presented an overview of the implicit theories model of intelligence and the implications for student academic-related cognition, affect and behavior. Empirical research highlighting the effects of students' theories of intelligence on response to failure, goal choice, and perception of effort was examined. The impact of teachers' implicit beliefs about intelligence on students' academic related affect, cognition and behavior in the classroom was reviewed. Teacher expectations research with regard to personal efficacy, race, gender, and socioeconomic status was summarized, and implications were made with regard to the impact of such beliefs on student achievement.

Research Hypotheses

Based on the literature reviewed and the questions outlined earlier, the following hypotheses were tested:

1. There is a statistically significant relationship between teachers' implicit beliefs about intelligence and teachers' self-efficacy.
2. There is a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the goal orientation promoted in the classroom.

3. There is a statistically significant relationship between teachers' self-efficacy and students' perceptions of the goal orientation promoted in the classroom.
4. Teachers' implicit beliefs about intelligence and self-efficacy will explain a significant amount of variance in perceptions of student goal orientations promoted in the classroom.
5. Students' gender and perceived ability level will explain a significant amount of variance in perceptions of student goal orientations promoted in the classroom.

CHAPTER 3

METHOD

This chapter includes (1) an explanation of the methodology to be used in this study, and why it was selected, (2) research questions, (3) a description of the variables, (4) a description of the participants in the study, (5) the data collection procedures, (6) the instruments used for assessing the variables, and (7) data analysis.

Overview

There is a long history of research focusing on the motivation-related constructs of implicit beliefs about intelligence, self-efficacy, teacher expectations, and goal orientation (Dweck, 1986; Dweck, 1988; Dweck, 1999; Dweck, Chiu & Hong, 1995; Ames, 1988; Ames & Archer, 1988). The majority of the research studies conducted on the implicit theory model of intelligence have focused on the impact of these beliefs on students' academic-related affect, cognition and behavior. It is well documented that students' beliefs about intelligence influence their academic achievement in multiple ways. Implicit beliefs about intelligence (entity or incremental) lead to differential emphasis on traits, versus more specific psychological or behavioral reasons, in understanding human actions and outcomes. Entity and incremental theories of intelligence orient individuals to see the same world from two different perspectives, and have been found to consistently predict the different ways in which identical events will be interpreted and dealt with (Dweck, et al., 1995).

While there is a preponderance of research linking students' implicit beliefs about intelligence to their goal orientations in academic settings, to this date, there is a lack of

research conducted investigating the relationship of teachers' beliefs about intelligence to their students' goal orientations. Teachers' beliefs create classroom environments that affect student achievement. Investigating teachers' beliefs and the relationships between these beliefs and students' experiences in the classroom provides educators with valuable information from which to draw in moving their students toward both a learning goal orientation and academic excellence. This study went beyond the examination of students' beliefs about intelligence and the relationship to students' goal orientations, and sought to shed light on the potential impact of teachers' beliefs about intelligence and self-efficacy on their students' perceptions of goal orientation in the classroom.

The research reviewed for this study highlighted the significant relationship between students' beliefs about intelligence and goal orientation. The teacher expectation research reviewed also highlighted the impact of teacher perceptions of both self (teacher self-efficacy) and students (race, gender, and socioeconomic status) on student academic-related affect, cognitions, and behaviors. Because of the above research findings, a targeted focus for the research questions existed prior to the investigation.

The correlational research design, using survey data, provided the researcher the opportunity to pose clear and concise questions, on a Likert-scale, specifically targeted to assess teachers' implicit beliefs about intelligence and teacher efficacy, and students' perceptions of goal orientation. Using the survey method of collecting data provided the researcher the opportunity to investigate these teacher beliefs (intelligence and efficacy) and students' perception of goal orientations with many more subjects than would have been possible had participants been interviewed individually.

Although a significant number of earlier studies conducted on students' implicit beliefs about intelligence and the impact of those beliefs on academic-related affect, cognition and behavior involved experimental research designs, this was not the intent of the current study. The purpose of the current study was not to determine cause and effect relationships between teacher variables (beliefs about intelligence and teacher efficacy) and students' perception of goal orientations, but, instead, to identify possible correlational relationships between teacher beliefs (intelligence and efficacy), and their students' perceptions of goal orientations.

Research Questions Answered by the Study

The research questions were identified following an extensive review of the literature on implicit beliefs about intelligence, teacher self-efficacy, and goal orientation.

This study was designed to answer the following questions:

5. Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and teacher self-efficacy?
6. Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the kind of goal orientation promoted in the classroom?
7. Is there a statistically significant relationship between teachers' self-efficacy and their students' perceptions of the kind of goal orientation promoted in the classroom?
8. Is there a statistically significant relationship between students' gender and perceived ability and students' perceptions of the kind of goal orientation promoted in the classroom?

Dependent Variable

The dependent variable (student perception of goal orientation) was measured with the Patterns of Adaptive Learning Scales (PALS): Perception of Classroom Goal Structures Survey (Appendix A) instrument. Three separate goal orientation sub-scales were measured: performance-approach, performance-avoid, and mastery.

Independent Variables

The independent variables were teachers' implicit beliefs about intelligence, teachers' levels of self-efficacy, students' gender, and students' perceptions about ability. Teachers' implicit beliefs about intelligence were measured with the six-item Theory of Intelligence Survey (Appendix B). Teachers' self-efficacy was measured with the 22 item Teacher Efficacy Survey (Appendix C). Students' gender and perceptions about ability were self-reported in the Student Demographic Questionnaire (Appendix D). Teachers also provided demographic information on the Teacher Demographic Questionnaire (Appendix E).

Participants

A sample of convenience was used for this study. The population for this study consisted of all secondary teachers of social science in the state of Kansas. The population sample consisted of secondary teachers who were teaching social science classes in Spring 2006 in 17 public high schools in the state of Kansas. The sample was representative of large-urban, medium, and small-rural high schools in northeast Kansas. For the purpose of the current study, the size of schools was defined based on the 2005-06 student enrollment figures and classification of size, according to Kansas State High School Activities Association (KSHSAA, 2005): (large schools: 1000-1627 students;

medium schools: 206-511 students; and small schools: 86-205 students). The target number of teachers for the study was 100; 63 teachers agreed to participate.

Approximately one third of the teachers were representative of each of the three school size categories. While 25 school districts were contacted, superintendents of only 17 school districts agreed to allow their teachers to participate in the study. Sixty-three secondary social science teachers agreed to participate.

The primary participants in this study were 63 teachers who were teaching high school social science courses in the state of Kansas (Grades 9-12). There were no requirements other than that the participants be currently teaching a secondary level social science class during the spring semester of 2006. Social science classes were used primarily because instructional format varies in all of these kinds of classrooms. The range of instructional approaches used by teachers in secondary social science classes varies in pedagogical style. Instructional strategies typically used by teachers in social science classes include direct instruction, lecture, whole classroom discussion, small group activities, etc. Because of the differences in instructional format found in such classes, both types of goal structures (i.e., mastery/learning and performance) were likely to be found in these classrooms. Data were collected from teachers across several content areas represented in secondary social science education. Content areas represented for social science include American history, government, economics, psychology, geography, and sociology. Data collected in the study were representative of size of school (large urban schools, medium sized schools, and small rural schools), and various levels of the social science subjects (i.e., college preparatory, traditional and

advanced). Students in these secondary social science classrooms served as participants only for the assessment of perception of classroom goal orientation (N = 1,214).

Procedures

After approval of the study by the Institutional Review Board for Research Involving Human Subjects (Appendix F), participants were recruited by contacting each school's superintendent and asking for approval to conduct research using high school teachers and their students in one or more high schools in the district. Following approval by the superintendents, the researcher contacted principals by either e-mail or telephone, regarding their interest in the study. Once principals' approval was secured, social science teachers were contacted and provided information about the study. For those teachers who agreed to participate, an introductory meeting was arranged, to describe the nature of the research and schedule a visit to one of their classrooms. The introductory meetings with the interested teachers were held at the school site; this allowed for the researcher to field questions and concerns teachers had regarding the nature of the research and the process by which assessments were to be conducted. In order to avoid a familiarity bias resulting from teachers completing the surveys more than once, only one class per teacher was surveyed. Teachers were permitted to choose which social science class to be included in the survey. The investigator made it clear to participating teachers that they were not required to participate in the study, despite the administrations' approval. The data was collected in the spring of 2006 (N = 63 teachers), (N = 1,214 students).

It was anticipated that teachers would complete both instruments (Theory of Intelligence Survey and Teacher Efficacy Survey) during their regularly scheduled social

science class. As teachers completed the Teacher Demographic Questionnaire (Appendix E) and the two teacher surveys, students were provided with an informed consent form (see Appendix F), and a Student Demographic Questionnaire (see Appendix D). Instructions to complete the class goal orientation measure were read aloud to the students. If the principals of those schools participating in the study preferred to have their teachers complete their surveys and distribute the students' surveys at their convenience, a protocol was sent to each teacher, providing instructions for survey distribution and completion (Appendix G).

Instrumentation

Theory of Intelligence Survey

Teachers' implicit theories of intelligence were measured using a six-item scale developed by Dweck and Henderson (Dweck, 1999). The six items used in the current study asked participants for a level of agreement with statements that reflect both an entity and incremental view of intelligence. The six items included in the implicit theory of intelligence measure are (1) "You have a certain amount of intelligence and you really can't do much to change it"; (2) "Your intelligence is something about you that you can't change very much"; and (3) "You can learn new things, but you can't really change your basic intelligence."; (4) "No matter who you are, you can change your intelligence a lot."; (5) "You can always greatly change how intelligent you are."; (6) "No matter how much intelligence you have, you can always change it quite a bit." Respondents indicated their agreement or disagreement with the six statements on a 6-point Likert-scale ranging from 1 (strongly disagree) to 6 (strongly agree). Scores on the six items were averaged to form an overall indicator of individuals' beliefs about intelligence. Teachers were classified as

entity theorists if their average item score was 3.0 or below, and classified as incremental theorists if their average item score was 4.0 or above.

Data from six validation studies support the use of this scale (Dweck, Chiu & Hong, 1995) for both reliability and validity purposes. Across these studies the implicit theory measure demonstrated high internal reliability; alphas ranged from .94 to .98, indicating high internal consistency for the instrument. Dweck and colleagues found the test-retest reliability of the measure over a 2-week period to be .82, suggesting that the measure has stability in its appraisal of theories about intelligence.

Construct validity of the theory of intelligence measure used in the current study has been established. Dweck, Chiu, & Hong conducted factor analyses on items for three separate implicit measurements (a) the intelligence theory measure, (b) the morality theory measure, and (c) the world theory measure. These three implicit measures were identified as all having the same format; researchers investigated the degree to which the implicit measurement of intelligence was a clear and separate factor. The researchers concluded that across five validation studies, the three implicit theory measures formed clear separate factors. Discriminant validity studies (Dweck et al., 1995) of this measure show it is distinct from measures of cognitive ability (Scholastic Aptitude Scores), confidence in the self (Confidence in Intellectual Ability), and self-esteem (Self-Esteem Inventory). These same validation studies have indicated that the implicit theory of intelligence measure is independent of the respondents' sex and age (Dweck et al, 1995).

Teacher Efficacy Survey

Gibson and Dembo's (1984) Teacher Efficacy Scale was used to assess teachers' levels of self-efficacy. The 22 items on this scale assessed teachers' perceptions of their

capabilities to promote student learning in their social science classrooms. A factor analysis conducted by Gibson and Dembo (1984) on responses from 208 elementary teachers assessed with the Teacher Efficacy Survey indicated that the instrument consists of two substantial factors (sub-scales) that account for 30 percent of the variance in responses (Woolfolk & Hoy, 1990). Gibson & Dembo (1984) noted that the two factors correspond to the dimensions of teaching efficacy (TE) and personal teaching efficacy (PE). The (TE) sub-scale represents the belief that the teaching profession as a whole can impact student learning. The (PE) sub-scale represents one's efficacy as an individual teacher to positively impact student learning. Of the 22 items in the scale, nine were included in the PE sub-scale, and 13 were included in the TE sub-scale. A teacher's total score for PE could range from a low of 9 to a high of 36; a teacher's total score for TE could range from a low of 13 to a high of 78.

Teachers responded to the 22 items on a 6-point Likert scale, from 1 (strongly disagree) to 6 (strongly agree). Composite scores for all teachers represent a combination of both TE and PE sub-scale scores. High scores on both the composite and sub-scale scores indicated higher levels of efficacy.

The Teacher Efficacy Scale (TES) was selected primarily because of its wide use in the literature (Gibson & Dembo, 1984; Woolfolk & Hoy, 1990), and because it has shown sufficient reliability. Analysis of internal consistency reliabilities yielded Cronbach's alpha coefficients of .78 for the Personal Teaching Efficacy factor, .75 for the Teaching Efficacy factor, and .79 for total items combined in the scale.

Patterns of Adaptive Learning Scales: (PALS) Perception of Goal Structure

Students' perceptions of the kinds of goals promoted in their social science classrooms were assessed with 14 items from the Patterns of Adaptive Learning Scales (PALS): Perception of Classroom Goal Structure Survey. The PALS survey (Midgley et al., 1998) was developed and tested for validity and reliability with seven different samples of elementary and middle school students (Midgley et al., 1998). The PALS contains three learning orientation sub-scales: task (mastery), performance-approach, and performance-avoid goal orientations.

Mastery Goal Orientation Sub-Scale. The task (mastery) goal orientation sub-scale measures the extent to which the respondents engage in academic tasks in order to develop their competence. The items referring to mastery goals emphasize the importance of understanding new ideas, developing new skills, learning from errors, and experiencing enjoyment during learning. Examples of items included in this scale are: "In our class, trying very hard is very important."; "In our class, how much you improve is really important."; and, "In our class, it's OK to make mistakes as long as you are learning." The original version of this scale ($\alpha = .76$) is presented in Midgley et al. (2000).

Performance-Approach Goal Orientation Sub-Scale. The performance-approach goal orientation sub-scale measures the extent to which the respondent focuses on demonstrating competence, especially in comparison to others. The items reflective of performance-approach goal orientation emphasize the importance of demonstrating competence, getting good grades, having the "right" answers, and outperforming others in the classroom. Items for this scale include: "In our class, getting good grades is the

main goal.”; ”In our class, getting right answers is very important.”; “In our class, it’s important to get high scores on tests.”. This scale has demonstrated significant internal consistency ($\alpha = .70$).

Performance-Avoid Goal Orientation Sub-Scale. The performance-avoid orientation sub-scale measures the degree to which respondents seek to avoid looking incompetent in comparison to others, and the avoidance of making mistakes in front of others. Included in this scale are: “In our class, showing others that you are not bad at class work is really important.”; “In our class, it’s important that you don’t make mistakes in front of everyone.”; and “In our class, it’s important not to do worse than other students.” Similar to the measure of performance-approach goals, the performance-avoid orientation scale demonstrated internal consistency (Alpha = .83).

Questionnaire items for all three sub-scales were used to measure student perception of goals promoted in the classroom and were prefaced with the heading “In our class…” and students rated each item on a 5-point Likert-scale, ranging from strongly disagree (1) to strongly agree (5). This heading was also verbally emphasized in instructions provided to students prior to their completing the survey, to assure that students consider specifically the goals emphasized in their social science classrooms.

Reliability and Validity. Confirmatory factor analysis was conducted on the task (mastery), performance-approach, and performance-avoid sub-scales items. A review of findings, combined with the results of confirmatory factor analyses conducted, indicates that the sub-scales demonstrate concurrent, construct, and discriminant validity (Midgley et al., 1998). In addition, all PALS scales have been found to be reasonably stable over time, and have solid internal consistency. Cronbach’s alpha for the scale assessing task

(mastery) goal sub-scale has been found to be greater than .70, and often greater than .80. Alphas ranged from .60 to .62 for the two performance goal sub-scales (Midgley et al., 1998).

Research Hypotheses

The hypotheses were as follows:

Hypothesis 1

There is a statistically significant relationship between teachers' implicit beliefs about intelligence and teachers' self-efficacy.

Hypothesis 2

There is a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the goal orientation promoted in the classroom.

Hypothesis 3

There is a statistically significant relationship between teachers' self-efficacy and students' perceptions of the goal orientation promoted in the classroom.

Hypothesis 4

Teachers' implicit beliefs about intelligence and self-efficacy will explain a significant amount of variance in student perceptions of the goal orientation promoted in the classroom.

Hypothesis 5

Students' gender and perceived ability level will explain a significant amount of variance in student perceptions of the goal orientation promoted in the classroom.

Analyses

Descriptive and inferential statistics were run for all data collected using SPSS version 14.0, (SPSS, 2005). Descriptive statistics included means and standard deviations on the three surveys: Theory of Intelligence Survey, Teacher Efficacy Survey, and Patterns of Adaptive Learning Scales (PALS): Perception of Classroom Goals Survey.

Total scores were computed for all surveys by computing the sum of the item responses on each survey. After these scores were investigated, composite scores were created for each survey by computing the mean of the responses to the items on each scale.

A simple correlational design and multiple regression was used to gather information on the relationships of teachers' implicit beliefs about intelligence, teachers' levels of self-efficacy, students' perceptions of goal orientation, students' gender, and students' perceptions of ability. All statistical tests were conducted at the .05 level of significance.

Students' perception of goal orientation was the dependent variable in this study. The dependent variable was measured with the PALS Survey. The independent variables were students' gender, students' perceptions of ability level, teachers' implicit beliefs about intelligence, and teachers' levels of self-efficacy.

Multiple regression analysis procedures were used to analyze the relationships among the independent and dependent variables. Multiple regression equations were developed for the purpose of predicting the dependent variable (students' perception of goal orientation) from the independent variables (students' gender and perception of ability, and teachers' implicit beliefs about intelligence, and teachers' self-efficacy).

A multiple regression model was utilized to determine whether independent and dependent variables were related to each other individually or cumulatively, and the strength and direction of the relationship. The square of the model's multiple correlation coefficient described what proportion of the variance of the dependent variable was accounted for by the independent variables (Howell, 1999; Huck, 2000).

CHAPTER 4

RESULTS AND ANALYSES

The purpose of this study was to investigate teachers' implicit beliefs about intelligence and self-efficacy, and their students' perceptions of goal orientation in the classroom. Chapter four includes (1) overview of the study, (2) brief review of the data collection procedures, (3) description of the teacher and student populations, (4) descriptive analysis of the results obtained with the survey instruments, (5) results of the hypothesis testing for the five hypotheses posed by the study, and (6) summary.

Overview of the Study

Teachers' implicit beliefs about intelligence were measured with Dweck and Henderson's Theory of Intelligence Survey (Appendix B) (Dweck, 1999); teachers' levels of self-efficacy were measured with the Teacher Efficacy Survey (Appendix C) (Gibson & Dembo, 1984). Students' perceptions of goal orientation were measured with the Patterns of Adaptive Learning Scales (PALS): Perception of Classroom Goal Structures Survey (Appendix A) (Midgley et al., 1998). The population consisted of teachers (N = 63) teaching social science classes during Spring 2006, and students (N = 1,214) enrolled in participating teachers' social science classes during Spring 2006.

Data Collection Procedures

Surveys were administered to teachers and students during regularly scheduled social science classes between January 5, 2006 and May 10, 2006. Approximately three weeks before the surveys were scheduled to be administered, the investigator contacted social science teachers by email or phone, and provided them with an overview of the

study. Scheduled days and times for administration of the surveys were confirmed with teachers, and packets of materials were assembled per teacher and students for each class participating. Both trained assistants and the investigator administered the surveys following a set protocol (see Appendix G). Participants were presented with an overview of the nature of the research, and an informed consent form (Appendix F) was provided for students to complete. Students kept one copy for their records, and one copy was kept for the investigator's records.

Teachers completed the Teacher Demographic Questionnaire (Appendix E), and students completed the Student Demographic Questionnaire (Appendix D) prior to completing the surveys; teachers and students completed all surveys at the same time. After the surveys were completed, the investigator entered all raw data into a spreadsheet. All participating respondents were assigned either a teacher or student participant number; back up copies of all data were made and filed for further reference.

Description of Teacher and Student Populations

Teachers

The Teacher Demographic Questionnaire was designed to provide information about teachers participating in the study. The questions included items related to gender, race/ethnicity, years of teaching experience, and grade level of the social science class in which the participating students were enrolled. Percentages presented in the tables in this section are based on the total number of teachers who responded to the item.

The teacher sample consisted of 63 secondary-level social science teachers teaching courses during the Spring 2006 semester in 17 school districts in northeast Kansas. Teachers participating in the study were representative of large, medium, and

small school district sizes. Size of schools was defined based on the 2005-06 student enrollment figures and classification of size, according to the Kansas State High School Activities Association (large schools: 1000-1,627 students; medium schools: 206-511 students; and small schools: 86-205 students). Table 1 summarizes the size of all schools participating in the study.

Table 1

School Size Based on Student Population

Size of School	<u>n</u>	%	Cumulative %
Small (86-205)	5	29.4	29.4
Medium (206-511)	5	29.4	58.8
Large (1,000-1,627)	7	41.2	100.0
Total	17	100.0	

Social science teachers participating in the study reported having between one and 15 or more years of teaching experience at the secondary level. Table 2 provides the frequency distribution for the sample of teachers.

Table 2

Years of Teaching Experience

Teaching Experience	<u>n</u>	%	Cumulative %
0-5 years	14	23.0	23.0
6-10 years	11	18.0	41.0
11-15 years	10	16.4	57.4
Over 15 years	26	42.6	100.0
No response	2		
Total	63		

Among those teachers responding to the teacher experience item, 36 (59%) reported having taught eleven or more years. The category with the greatest number of teachers represented was that of teachers possessing more than 15 years of teaching experience in the classroom. Twenty-five teachers (41%) reported having accumulated ten years or less teaching experience. In general, teachers participating in this study were experienced educators with more than five years of teaching experience.

Because previous studies have shown gender differences in students' implicit beliefs about intelligence (Dweck et al., 1980; Dweck & Leggett, 1988), the investigator asked teacher respondents to indicate their gender on the Teacher Demographic Questionnaire. Table 3 provides a breakdown of gender represented in the teacher sample.

Table 3

Teachers' Gender

Gender	<u>n</u>	%
Male	46	75.4
Female	15	24.6
No Response	2	
Total	63	

Of those who reported their gender, three quarters were males and one quarter was female.

Teachers were asked to note their race/ethnicity. Table 4 presents the frequency distribution for this sample of teachers.

Table 4

Teachers' Race/Ethnicity

Race/Ethnicity	<u>n</u>	%	Cumulative %
Caucasian	53	86.9	86.9
African American	2	3.3	90.2
Hispanic	3	4.9	95.1
Asian American	1	1.6	96.7
American Indian/Alaskan	1	1.6	98.4

(table continues)

Race/Ethnicity	<u>n</u>	%	Cumulative %
Other	1	1.6	100.0
No Response	2		
Total	63		

Teachers responding to the survey item for race/ethnicity were overwhelmingly Caucasian. Only eight teachers (13%) of the total participants responding to this item indicated they were of an ethnic/racial category other than Caucasian. The ethnic profile of the teacher sample reflected the demographic make up of the 17 schools participating in northeast Kansas; teachers teaching in high schools in Kansas are overwhelmingly Caucasian.

In an effort to characterize the kinds of social science classrooms represented in the sample, teachers were asked to report the grade level of the social science class they were teaching at the time the surveys were administered. As shown in Table 5, there was approximately equal representation of all grade levels, as reported by teachers.

Table 5

Grade Level of Social Science Class			
Grade Level	<u>n</u>	%	Cumulative %
9 th	15	24.6	24.6
10 th	10	16.4	41.0
11 th	17	27.0	68.9
12 th	9	14.8	83.6
Mixed Levels	10	16.4	100.0
No Response	2		
Total	63		

In summary, teachers participating in the current study were primarily male, white, and teaching grades 9-12 secondary-level social science classes. Most were veteran teachers, with more than eleven years of professional experience. Teachers were reasonably distributed across size of school and grade levels.

Students

The student sample consisted of 1,214 secondary-level students (grades 9 through 12). All students participating in the study were enrolled during the Spring 2006 semester in various levels of social science classes in 17 school districts in northeast Kansas. The Student Demographic Questionnaire provided information about the student subjects in the study. Items included those related to gender, race/ethnicity, grade level,

grades earned in the social science class, and self-perception of ability level in the social science class as compared to others in the same class. Percentages presented in the tables in this section are based on those who responded to the item.

Students were asked to indicate their gender. Table 6 provides a breakdown of the students' gender.

Table 6

Students' Gender		
Gender	<u>n</u>	%
Male	588	50.5
Female	576	49.5
No Response	50	
Total	1,214	

As Table 6 indicates, approximately equal percentages of male and female students participated in the study.

Students were also asked to identify their race/ethnicity on the Student Demographic Questionnaire. Student responses to the item are presented in Table 7.

Table 7

Students' Race/Ethnicity

Race/Ethnicity	<u>n</u>	%	Cumulative %
Caucasian	774	66.9	66.9
African American	120	10.4	77.3
Hispanic	96	8.3	85.6
Asian American	22	1.9	87.5
American Indian/Alaskan	11	1.0	88.4
Other	134	11.6	100.0
No Response	57		
Total	1,214		

While all racial/ethnic categories were represented in the student sample, the majority of students identified themselves as Caucasian 774 (67%). Only 249 students (23%) identified themselves as belonging to one of the other four racial/ethnic categories.

Students were asked to indicate their grade levels at the time the surveys were completed. Table 8 provides a breakdown of students' grade level.

Table 8

Students' Grade Level

Grade Level	<u>n</u>	%	Cumulative %
9 th	271	23.3	23.3
10 th	250	21.5	44.7
11 th	430	36.9	81.6
12 th	214	18.4	100.0
No Response	49		
Total	1,214		

All grade levels were represented in the student sample, with 11th grade identified by the largest fraction of the students. Over half of the students who responded to this item were upperclassmen (either 11th or 12th graders).

Students were asked to report the grade they typically earned in the social science class for which they were completing the survey. Students' reported grades earned in the social science class are indicated in Table 9.

Table 9

Grade in Social Science Class			
Grade	<u>n</u>	%	Cumulative %
Mostly A's	462	39.7	39.7
Mostly B's	394	33.9	73.6
Mostly C's	238	20.5	94.1
Mostly D's	56	4.8	98.9
Below D's	13	1.1	
No Response	51		
Total	1,214		

Approximately 74 percent of all students reported that they were A or B students. Only 5.9 percent of all students reported earning mostly Ds or below in the social science class they were completing the survey for.

Students were asked to rate their ability level, as compared with others in the same class, on a five-point Likert scale with 1 (one of the lowest) to 5 (one of the highest). The breakdown of ability ratings for all students who responded to this item is provided in Table 10.

Table 10

Students' Rating of Ability Level in Social Science Classroom

Rating	n	%	Cumulative %
1 (one of the lowest)	9	.8	.8
2	62	5.3	6.1
3	351	30.2	36.3
4	490	42.2	78.5
5 (one of the highest)	250	21.5	100.0
No Response	52		
Total	1,214		

Overall, students reported being average (3) to high (4 or 5) in self-perception of ability (94%). Only six percent of the students responding to this item reported being below average (1 or 2) in ability, compared to other students in the class.

In summary, students were primarily white, and approximately equal in representation of gender. The majority of students were 11th or 12th graders. In general, the student sample for the current study was more ethnically diverse than the teacher sample, however the majority of students (67%) were Caucasian. The majority of the students reported that they were A to B students in the social science class, and the majority also reported they were average to high in ability.

Results Obtained with the Instruments

Theory of Intelligence Survey

The study utilized the Theory of Intelligence Survey developed by Dweck and Henderson (Dweck, 1999) to measure teachers' implicit beliefs about intelligence. An incremental belief about intelligence includes the perspective that intelligence is unstable, dynamic, and malleable. An entity belief about intelligence includes the perspective that intelligence is stable, fixed, and permanent.

The Theory of Intelligence Survey is a six-item instrument that asked teachers to select a level of agreement with statements that reflect both an incremental and entity view of intelligence. Teachers responded to the six items using a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Item responses were summed, giving total scores that ranged from 6 to 36. Items were worded such that teachers holding incremental theories of intelligence were likely to score higher than teachers holding entity theories of intelligence. Table 11 presents the frequency distribution of teachers' total scores on the Theory of Intelligence Survey.

Table 11

Teachers' Total Scores on Theory of Intelligence Survey

Theory of Intelligence Score	<u>n</u>	%	Cumulative %
12	1	1.6	1.6 (table continues)

Theory of Intelligence Score	<u>n</u>	%	Cumulative %
14	2	3.2	4.8
15	3	4.8	9.7
16	2	3.2	12.9
17	1	1.6	14.5
18	2	3.2	17.7
20	6	9.5	27.4
21	8	12.7	40.3
22	3	4.8	45.2
23	3	4.8	50.0
24	4	6.3	56.5
25	3	4.8	61.3
26	2	3.2	64.5
27	3	4.8	69.4
28	6	9.5	79.0
29	3	4.8	83.9
30	4	6.3	90.3
31	2	3.2	93.5
33	1	1.6	95.2
36	3	4.8	100.0
No Response	1	1.6	
Total	63		

Teachers' total scores ranged from a low of 12 (strong entity belief) to a high of 36 (strong incremental belief). Seventeen teachers (27%) had scores ranging from 12 to 20. Twenty-six teachers (42%) had scores ranging from 21-27. Nineteen teachers (31%) had scores ranging from 28 to 36. The mean score for all teachers on the Theory of Intelligence Survey was 23.79, SD = 5.70

With teachers' theory of intelligence scores as the dependent variable, several single factor ANOVAS were conducted to determine whether or not significant differences existed between the demographic subgroups. An alpha level of .05, adapted to fit the number of separate tests conducted with the same data, was used. Tables 12, 13, 14, and 15 present the frequency distributions of teachers' total scores on the intelligence survey according to gender, race/ethnicity, years of teaching experience, and grade level of social science class.

Table 12

Teachers' Total Scores on Theory of Intelligence Survey: Gender

Gender	<u>n</u>	<u>M</u>	<u>SD</u>
Male	46	24.11	5.91
Female	15	24.00	5.22
Total	61		

Table 13

Teachers' Total Scores on Theory of Intelligence Survey: Race/Ethnicity:

Race/Ethnicity	<u>n</u>	<u>M</u>	<u>SD</u>
Caucasian	53	23.66	5.71
African American	2	24.50	3.54
Hispanic	3	23.33	7.02
Asian American	1	-	
American Indian/Alaskan	1	-	
Other	1	-	
Total	61		

Note. Dashes indicate the scores were not shared in order to protect confidentiality.

Table 14

Teachers' Total Scores on Theory of Intelligence Survey: Years of Teaching Experience:

Number of Years Teaching	<u>n</u>	<u>M</u>	<u>SD</u>
0-5 Years	14	22.79	4.42
6-10 Years	11	23.36	7.10
11-15 Years	10	25.50	5.25
Over 15 Years	26	24.00	6.04
Total	61		

Table 15

Teachers' Total Scores on Theory of Intelligence Survey: Grade Level

Grade Level	<u>n</u>	<u>M</u>	<u>SD</u>
9th	15	25.13	5.03
10th	10	24.70	6.11
11th	17	21.65	5.43
12th	9	23.56	6.80
Mixed Levels	10	25.10	5.80
Total	61		

As Tables 12-15 indicate, teachers' total scores on the Theory of Intelligence Survey did not vary significantly with respect to gender, race/ethnicity, years of teaching experience or grade level.

Teachers' responses were then examined in order to identify teachers as either incremental or entity theorists. Scores on the six items were averaged for each teacher, forming an average item response score (ranging from 1 to 6), with a higher score indicating a stronger incremental theory of intelligence.

To ensure that only teachers with well-defined entity or incremental theories about intelligence were included, teachers were classified as entity theorists if their average item response score was 3.0 or below, and classified as incremental if their average item response score was 4.0 or above. Those teachers whose total average implicit theory score fell between 3.1 and 3.9 were considered neither entity nor incremental. When Dweck and colleagues (Dweck, Chiu & Hong, 1995) used the same criteria to identify teachers' implicit theories of intelligence as incremental or entity

based, they found that 15 percent of the participants were typically excluded, and the remaining 85 percent to be evenly distributed between the two implicit theory groups. Using the same criteria as described Dweck et al., the present study identified 30 teachers as incremental theorists, 11 as entity theorists, and 20 as neither entity or incremental. A breakdown of teachers' average item response scores per category is presented in Table 16.

Table 16

Teachers' Theory of Intelligence: Average Scores for All Items

Implicit Theory	<u>n</u>	%
Entity Theory (2.00-2.83)	11	17.74
Incremental Theory (4.17-6.00)	30	50.00
Not Categorized (3.00-4.00)	20	32.25
No Response	2	
Total	63	100.00

As Table 16 indicates, the majority of teachers' (50%) average item response scores fell into the incremental theory of intelligence category. Unlike Dweck and colleagues (Dweck, Chi & Hong, 1995), who identified 15 percent of the teachers as neither clearly incremental or entity, the current study identified 32 percent of the teachers as such.

The descriptive data for average item response scores suggests that, with the exception of those teachers teaching between 11-15 years, teachers who have the greatest number of years of teaching experience were more likely to be incremental in their views about intelligence than those with fewer years of teaching experience. Table 17

summarizes the average item response scores for all teachers per years of teaching experience.

Table 17

Average Item Response Scores for Theory of Intelligence Survey: Years of Teaching Experience

Years of Teaching Experience	<u>n</u>	<u>M</u>	<u>SD</u>
0-5 Years	14	3.80	.74
6-10	11	3.89	1.18
11-15 Years	10	4.25	.88
Over 15 Years	26	4.00	1.01
Total	61		

A frequency distribution of item responses is found in Appendix H.

The item mean scores and standard deviations for all items are presented in Table 18. Teachers responded to all items on a 6-point Likert scale, ranging from strongly disagree (1) to strongly agree (6). The items are arranged from high to low by the mean of the item scores.

Table 18

Theory of Intelligence Survey: Item Means and Standard Deviations

Item No.	Item	<u>M</u>	<u>SD</u>
4.	No matter who you are, you can change your intelligence a lot.	3.82	1.24

(table continues)

Item No.	Item	<u>M</u>	<u>SD</u>
5.	No matter how much intelligence you have, you can always change it quite a bit.	3.63	1.19
6.	You can always greatly change how intelligent you are.	3.60	1.19
3.	You can learn new things, but you cannot really change your basic intelligence.	2.84	1.18
2.	Your intelligence is something about you that you cannot change very much.	2.71	1.17
1.	You have a certain amount of intelligence and you really cannot do much to change it.	2.71	1.18

Note: N = 62. Scores are based on a 1-6 scale. Overall M = 3.21

Items one, two, and three are statements that reflect of an entity belief about intelligence; items four, five, and six are statements that reflect an incremental belief about intelligence. The average score for all teachers for the incremental items was 3.68. The average score for all teachers for the entity items was 2.75. Both average scores indicate a tendency for teachers to be hesitant to commit to either an incremental or entity view about intelligence on the intelligence survey.

Teacher Efficacy Survey

All participating teachers completed the Teacher Efficacy Survey; this instrument consisted of 22 items measuring teachers' levels of self-efficacy. The survey assessed

teachers' perceptions of their capabilities to promote student learning in their classroom. The Teacher Efficacy Survey asked teachers to select a level of agreement with statements that reflect their efficacy with regard to a variety of classroom situations. Teachers responded to the 22 items using a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Item responses were summed, giving total scores ranging from 22 to 132. Items were worded such that teachers possessing higher levels of efficacy on the survey were likely to score higher than those teachers possessing lower levels of efficacy. The mean score for all teachers on all 22 items of the Teacher Efficacy Survey was 85.84 with a standard deviation of 9.66.

The range of scores for teachers on the Teacher Efficacy Survey was 71-122. Upper and lower quartiles for all teachers' scores for the Teacher Efficacy Survey were examined. Teachers whose scores were at or below 79 were represented in the lower quartile. Teachers whose scores were at or above 92 were represented in the upper quartile. The distribution of teachers' total scores on the efficacy instrument indicate that, in general, teachers in the present study reported being more efficacious than not. Twenty-five percent of the teachers' efficacy scores fell in the lower quartile range (71-79) and twenty-five percent of the teachers' efficacy scores fell in the upper quartile range (92-122). Table 19 presents a frequency distribution of total efficacy scores for all teachers in the sample.

Table 19

Teachers' Total Scores for Teacher Efficacy Survey

Efficacy Score	<u>n</u>	%	Cumulative %
71	1	1.6	1.7
73	1	1.6	3.4
74	2	3.2	6.9
75	4	6.3	13.8
77	1	1.6	15.5
78	3	4.8	20.7
79	4	6.3	27.6
80	3	4.8	32.8
81	3	4.8	37.9
82	5	7.9	46.6
83	1	1.6	48.3
84	2	3.2	51.7
85	3	4.8	56.9
86	5	7.9	65.5
88	2	3.2	69.0
90	3	4.8	74.1
92	2	3.2	77.6
94	2	3.2	81.0

(table continues)

Efficacy Score	<u>n</u>	%	Cumulative %
95	2	3.2	84.5
96	1	1.6	86.2
97	1	1.6	87.9
99	1	1.6	89.7
100	3	4.8	94.8
101	1	1.6	96.6
108	1	1.6	98.3
122	1	1.6	100.0
No Response	5		
Total	63		

With teachers' efficacy scores as the dependent variable, several single factor ANOVAS were conducted to determine whether or not significant differences existed between the demographic subgroups with regard to the teachers' total scores for efficacy. Neither gender, years of teaching experience, or grade level of the social science class were found to be significantly related to teachers' total efficacy scores. Tables 20, 21, 22 and 23 present means and standard deviations of the total teacher efficacy scores for the demographic variables: gender, race/ethnicity, years of teaching experience, and grade level of social science class.

Table 20

Teachers' Total Scores on Teacher Efficacy Survey: Gender

Gender	<u>n</u>	<u>M</u>	<u>SD</u>
Male	46	85.76	10.28
Female	15	86.87	8.46
Total	61		

Table 21

Teachers' Total Scores on Teacher Efficacy Survey: Race/Ethnicity

Race/Ethnicity	<u>n</u>	<u>M</u>	<u>SD</u>
Caucasian	48	85.17	8.61
African American	2	84.00	2.83
Hispanic	3	92.67	10.21
Asian American	1	-	
American Indian/Alaskan	1	-	
Other	1	-	
Total	56		

Note. Dashes used to indicate scores were not shared in order to protect confidentiality.

Table 22

Teachers' Total Scores on Teacher Efficacy Survey: Years of Experience

Number of Years Teaching	<u>n</u>	<u>M</u>	<u>SD</u>
0-5 Years	14	85.00	8.10
6-10 Years	11	85.45	13.93
11-15 Years	9	82.44	7.23
Over 15 Years	22	88.50	9.15
Total	56		

Table 23

Teachers' Total Scores on Teacher Efficacy Survey: Grade Level of Social Science

Class

Grade Level of Class	<u>n</u>	<u>M</u>	<u>SD</u>
9th	13	89.54	13.19
10th	9	83.44	5.92
11th	15	84.27	9.15
12th	9	89.44	9.65
Mixed Levels	10	83.50	7.59
Total	56		

In general, teachers' total scores on the Teacher Efficacy Survey were similar, irrespective of gender, race/ethnicity or grade level of social science class. While differences in total scores with regard to race/ethnicity were found, teacher numbers in

the minority categories were too small to support any statistical analysis. Teachers' years of teaching experience did appear to be related to the levels of efficacy reported.

Teachers with more than 15 years of experience reported higher levels of teacher self-efficacy than those with fewer years of teaching experience.

Table 24 presents the total Teacher Efficacy Survey item mean scores and standard deviations. Teachers responded to all items on a 6-point Likert scale, ranging from strongly disagree (1) to strongly agree (6). The 22 items are arranged from high to low by item mean. Frequency distributions for item responses are presented in Appendix I.

Table 24

Teacher Efficacy: Item Means and Standard Deviations

(1 = strongly disagree; 6 = strongly agree)

Item No.	Item	<u>M</u>	<u>SD</u>
16.	If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.	4.82	.866
7.	When a student is having difficulty with an assignment, I am usually able to adjust to his/her level.	4.77	.716
13.	If a parent would do more for their children, I could do more.	4.57	1.079

(table continues)

Item No.	Item	<u>M</u>	<u>SD</u>
8.	When I really try, I can get through to most difficult students.	4.38	.860
22.	My teacher training program and/or experience has given me the necessary skills to be an effective teacher.	4.36	1.330
14.	If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	4.28	.777
17.	If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	4.18	.958
12.	If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.	4.16	.860
11.	When the grades of my students improve, more effective approaches, it is usually because I found better ways of teaching that student.	4.11	.896
18.	If I really try hard, I can get through to even the most difficult or unmotivated students.	4.08	1.124
1.	When a student does better than usually, many times it is because I exert a little extra effort.	4.08	.954

(table continues)

Item No.	Item	<u>M</u>	<u>SD</u>
15.	The influences of a student's home experiences can be overcome by good teaching.	4.05	1.132
8.	When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student.	3.93	.910
3.	If students aren't disciplined at home, they aren't likely to accept any discipline.	3.90	1.274
2.	The hours in my class have little influence on students compared to the influence of their home environment.	3.74	1.264
9.	A teacher is very limited in what he/she can achieve because a student's home environment has a large influence on his/her achievement.	3.68	1.172
5.	I have enough training to deal with almost any learning problem.	3.57	1.347
21.	Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.	3.25	1.260
19.	When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment.	3.23	1.055
3.	The amount a student can learn is primarily related to family background.	3.18	1.408

(table continues)

Item No.	Item	<u>M</u>	<u>SD</u>
10.	Teachers are not a very powerful influence on student achievement when all factors are considered.	2.31	.923

Note. N = 62. Scores are based on a 1-6 scale. Overall M = 4.10

Teacher efficacy has been identified as consisting of teachers' general efficacy, similar to Bandura's outcome expectations (Bandura & Cervone, 1983). Teacher self-efficacy is assumed by some researchers to consist of two separate dimensions, a teacher efficacy dimension (TE), and a personal teaching efficacy dimension (PE) (Gibson & Dembo, 1984; Woolfolk & Hoy, 1990). These two dimensions tap into two different attitudinal areas.

Teacher efficacy includes an individual's belief that the teaching profession as a whole can impact student learning. Personal teaching efficacy includes an individual's belief that he or she is capable of achieving a certain level of performance in that situation (Woolfolk & Hoy, 1990). The teacher efficacy scale used in the present study included items for both dimensions.

Because novice teachers often lack the experience necessary to both manage classroom discipline and motivate students effectively (Woolfolk & Hoy, 1990), it is reasonable to assume that such teachers would possess lower levels of efficacy than those teachers who have more experience in the classroom. Table 25 presents the teachers' total efficacy scores, as well as the teacher efficacy and personal teaching efficacy sub-scale scores as a function of years of teaching experience.

Table 25

Teacher Efficacy: Years of Teaching Experience

Years	Sub-scale	<u>M</u>	<u>SD</u>
0-5 Years	Personal Teaching Efficacy (13-78)	53.50	5.29
	Teacher Efficacy (9-36)	31.50	6.37
	Total Self Efficacy (22-132)	85.00	8.10
6-10 Years	Personal Teaching Efficacy (13-78)	54.55	7.30
	Teacher Efficacy (9-36)	30.91	7.05
	Total Self Efficacy (22-132)	85.45	13.93
11-15 Years	Personal Teaching Efficacy (13-78)	51.00	4.92
	Teacher Efficacy (9-36)	31.56	6.00
	Total Self Efficacy (22-132)	82.44	7.23
Over 15 Years	Personal Teaching Efficacy (13-78)	55.74	7.09
	Teacher Efficacy (9-36)	33.00	6.58
	Total Self Efficacy (22-132)	88.50	9.15

In general, teachers' levels of self-efficacy appear to increase with additional years of teaching experience in the classroom. Teachers with 0-5 years of experience had a mean score for total self-efficacy of 85.00; those with over 15 years of experience had a mean score for total self-efficacy of 88.50. The overall trend for both the PE sub-scale scores, and total efficacy scores was to increase in strength between 0-10 years of teaching experience, and then slightly decline between 11-15 years of teaching experience. Teachers teaching 15 or more years reported the highest levels of self-efficacy. This was the case for both the total composite efficacy score, as well as the two sub-scale scores (TE and PE).

The total composite score for each teacher was used in the statistical analyses conducted to test for the hypotheses involving teacher self-efficacy. Both the teacher efficacy (TE) and personal teaching efficacy (PE) sub-scale items were used to form a total efficacy score for each teacher.

Patterns of Adaptive Learning Scale (PALS): Perception of Classroom Goal Structure Survey

Students completed the Patterns of Learning Scales (PALS): Perception of Classroom Goal Structure Survey developed by Midgley et al., (1998). The PALS Survey consists of 14 items that assessed students' perceptions of goal orientation in the classroom on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The PALS Survey consists of three separate sub-scales: mastery/learning, performance-approach and performance-avoid. A mastery/learning goal focuses on developing competence, making progress, and achieving mastery of material and/or

tasks. In general, performance goals focus on demonstrating competence and social comparison. A performance-approach goal focuses on demonstrating high ability, while a performance-avoid goal focuses on demonstrating high ability in order to avoid looking incompetent in comparison to others (Kaplan & Maehr, 2002).

Items 1-6 are statements that reflect a mastery/learning orientation, and items 7-14 reflect a performance orientation. Of the eight total performance items, three items (7, 8 and 9) reflect a performance-approach sub-scale; five items (10, 11, 12, 13 and 14) reflect a performance-avoid sub-scale. Possible total scores on the PALS instrument ranged from 14 to 70, with higher scores reflecting a mastery/learning goal and lower scores reflecting a performance (either performance-approach or performance-avoid) goal.

Table 26 presents the means and standard deviations of all students' total scores for the PALS Survey as well as the three sub-scale scores.

Table 26

PALS Sub-scales: Mean Scores and Standard Deviations

<u>Sub-scale</u>	<u>n</u>	<u>M</u>	<u>SD</u>
Performance-Approach (3-15)	1,207	6.24	2.448
Performance-Avoid (5-25)	1,209	15.79	4.765
Mastery/Learning (6-30)	1,209	25.14	3.628
PALS Total (14-70)	1,201	47.18	6.76

Note. Not all students answered all items for each goal orientation sub-scale. For those students who did not answer all items for a sub-scale, their specific sub-scale score was

not included in the calculation of both the mean and standard deviation for the sub-scale itself.

Approximate normal distributions were found for the students' total PALS scores and the performance-avoid sub-scale scores. Performance-approach sub-scale scores were positively skewed and mastery sub-scale scores were negatively skewed.

An examination of the demographic data for the PALS scores failed to identify significant relationships for gender, race/ethnicity, grade level, or grades in the social science class in students' PALS scores. Means and standard deviations for all students' PALS scores, based on demographic variables per sub-scale are presented in Appendix J. Frequency distributions of item responses are presented in Appendix K.

While no significant differences were found for gender, race/ethnicity, grade level, or grades in the social science class on the PALS scores, students' ability rating did appear to be related to students' PALS scores. Students who reported having the highest levels of ability, as compared to others in the same class, also had the highest mastery sub-scale scores. Students who reported having the lowest levels of ability had the lowest mastery sub-scale scores. Table 27 presents a summary of all students' mean scores and standard deviations for all goal orientations, per ability rating.

Table 27

Student Total Scores on PALS Sub-scales: Ability Rating Compared to Others

Ability Rating	PALS Scores	<u>M</u>	<u>SD</u>
One of the lowest (n = 9)	Approach Sub-scale (3-15)	6.78	1.92

(table continues)

Ability Rating	PALS Scores	<u>M</u>	<u>SD</u>
	Avoidance Sub-scale (5-25)	15.00	5.61
	Mastery Sub-scale (6-30)	22.00	5.55
	PALS Total Score (14-70)	43.78	8.63
2 (n = 62)	Approach Sub-scale (3-15)	6.58	2.78
	Avoidance Sub-scale (5-25)	16.31	5.10
	Mastery Sub-scale (6-30)	23.56	4.91
	PALS Total Score (14-70)	46.52	6.95
3 (n = 351)	Approach Sub-scale (3-15)	6.47	2.39
	Avoidance Sub-scale (5-25)	16.18	4.55
	Mastery Sub-scale (6-30)	24.79	3.50
	PALS Total Score (14-70)	47.45	6.55
4 (n = 490)	Approach Sub-scale (3-15)	6.24	2.36
	Avoidance Sub-scale (5-25)	15.63	4.75
	Mastery Sub-scale (6-30)	25.24	3.53
	PALS Total Score (14-70)	47.14	6.77

(table continues)

Ability Rating	PALS Scores	<u>M</u>	<u>SD</u>
One of the highest (n = 250)	Approach Sub-scale (3-15)	5.72	2.54
	Avoidance Sub-scale (5-25)	15.22	5.07
	Mastery Sub-scale (6-30)	25.97	3.29
	PALS Total Score (14-70)	46.90	7.10

In general, students' total scores on the PALS Survey indicate that students who reported the highest levels of ability tend to also possess higher mastery sub-scale scores. The difference in the mean scores for students on the mastery sub-scale, based on their rating of ability (highest versus lowest), is 3.97.

Table 28 provides the item mean scores and standard deviations of all items on the PALS Survey. Students responded to all items on a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). Items are arranged from high to low by the item means.

Table 28

Patterns of Learning Scales: Mean Scores and Standard Deviations

Item No.	Item	<u>M</u>	<u>SD</u>
6.	It's OK to make mistakes as long as you are learning.	4.24	.876
1.	Trying hard is very important	4.23	.860

(table continues)

Item No.	Item	<u>M</u>	<u>SD</u>
3.	Really understanding the material is the main goal.	4.23	.813
4.	It's important to understand the work, not just memorize it.	4.19	.926
2.	How much you improve is really important.	4.17	.855
5.	Learning new ideas and concepts if very important.	4.09	.830
9.	It's important to get high scores on tests.	4.08	.922
7.	Getting good grades is the main goal.	3.88	1.033
8.	Getting right answers is very important.	3.79	.952
11.	Showing others that you are not bad at class work is really important.	3.10	1.084
12.	It's important not to do worse than other students.	2.88	1.173
13.	It's very important not to look dumb.	2.84	1.282
14.	One of the main goals is to avoid looking like you can't do the work.	2.74	1.230
11.	It's important that you don't make mistakes in front of everyone.	2.65	1.164

Note: N = 1,210 (listwise). Scores are based on a 1-5 scale. Overall M = 3.37.

Based on the total student sample for this study, average item scores for all three sub-scales were computed. The average item score for all students on the performance-approach items was 5.28. The average item score for all students on the performance-avoid items was 3.39. The average item score for all students on the mastery items was 4.19. The descriptive data suggests that the students participating in this study, as a collective group, appear to be more performance-approach oriented than either mastery or

performance-avoid oriented in the social science classroom. The average item score was lowest for the performance-avoid sub-scale.

Results of Hypotheses Testing

The current study focused on five hypotheses that required inferential statistical analysis. All five hypotheses were tested at the .05 level of significance.

1. There is a statistically significant relationship between a teacher's implicit belief about intelligence and his/her degree of teacher self-efficacy.
2. There is a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the goal orientation promoted in the classroom
3. There is a statistically significant relationship between teachers' self-efficacy and students' perceptions of the goal orientation promoted in the classroom.
4. Teachers' implicit beliefs about intelligence and self-efficacy will explain a significant amount of variance in perceptions of student goal orientations promoted in the classroom.
5. Students' gender and perceived ability level will explain a significant amount of variance in perceptions of classroom goal orientations.

Research Hypothesis One

There is a statistically significant relationship between a teacher's implicit belief about intelligence and their degree of teacher self-efficacy.

In order to test this hypothesis, the Pearson Product Moment correlation coefficient was calculated using total scores (for all teachers) for the two teacher surveys: Theory of Intelligence Survey and Teacher Efficacy Survey. A moderate positive

correlation ($r = .468, p < .01$) was found between teachers' implicit beliefs about intelligence, and their level of self-efficacy. Teachers who hold an incremental view of intelligence are more likely to score higher on the teacher self-efficacy scale than teachers who hold an entity view of intelligence.

In order to determine the practical significance of the correlation the Pearson r was squared yielding a coefficient of determination of .22. Thus, approximately 22 percent of the variability in the teacher self-efficacy scores can be accounted for by the variability found in the teacher beliefs about intelligence scores.

The researcher subjected the data collected from the Theory of Intelligence Survey to additional statistical analysis in order to check for the instrument's internal consistency. Cronbach's alpha was used to determine internal consistency; scale reliability was confirmed, and found to be acceptable ($\alpha = .886$). Alphas ranged from .94 to .98 on six validation studies (Dweck et al., 1995) supporting high internal consistency of the instrument.

Cronbach's alpha was also performed on the Teacher Efficacy Survey; internal consistency was confirmed ($\alpha = .76$). This is similar to earlier Cronbach alpha coefficients of .78, .75 and .79 (Gibson & Dembo, 1984; Woolfolk & Hoy, 1990).

Research Hypothesis 2

There is a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the goal orientation promoted in the classroom.

In order to test this hypothesis, the Pearson Product Moment correlation was calculated to determine the correlational relationship between the two variables: teachers' beliefs about intelligence and students' perceptions of goal orientation in the

classroom. A non-significant result was obtained ($r = -.042$, $p > .05$), indicating no statistical relationship between the two variables at the .05 level. Total scores on both the Teacher Theory of Intelligence Survey and the PALS Survey indicate that teachers' theories of intelligence do not appear to be related to students' perceptions of classroom goal orientation.

Research Hypothesis Three

There is a statistically significant relationship between teachers' self-efficacy and students' perceptions of the goal orientation promoted in the classroom.

The Pearson Product Moment correlation was calculated to test this hypothesis. A weak, but statistically significant, correlation was identified between teachers' total scores for self-efficacy and their students' total scores on perceptions of goal orientation ($r = -.073$, $p < .05$). The Pearson r was squared yielding a coefficient of determination of .005. This indicates that less than one percent of the variability in the PALS scores, testing for goal orientation in the classroom, can be accounted for by the variability in the teacher self-efficacy scores. Thus, while statistical significance was found for hypothesis three, the amount of variance explained by the relationship is probably too small to warrant further attention.

Research Hypothesis Four

Teachers' implicit beliefs about intelligence and self-efficacy will explain a significant amount of variance in perceptions of goal orientations promoted in the classroom.

In order to test this hypothesis, a multiple regression analysis was performed. The analysis tested the relationship between the two independent variables (total scores for both teacher beliefs about intelligence and teacher self-efficacy) to the dependent variable

(total scores for student perception of goal orientation in the classroom). A multiple linear regression was calculated predicting students' perceptions of goal orientation scores based on their teachers' beliefs about intelligence scores and self-efficacy scores. The regression equation was not significant ($F(2, 1,033) = .066, p > .05$) with an R^2 of .005. Neither teachers' implicit beliefs about intelligence or teachers' self-efficacy scores can be used to predict students' perception of goal orientation of the classroom. Table 29 presents the regression table related to this test.

Table 29

Regression Analysis: Teachers' Beliefs About Intelligence and Teachers' Self-Efficacy as Predictors of Variance in Students' Goal Orientation

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
PALS Total Score					
Regression	248.64	2	124.32	2.73	.066
Residual	47015.52	1,033	45.51		
Total	47264.16	1,035			

In an effort to determine the relationship between students' PALS scores and teachers' theories of intelligence for only those teachers clearly identified as incremental or entity based, a simple one-way ANOVA was conducted. With students' perceptions of classroom goal orientation as the dependent variable, and teachers' beliefs about intelligence as the independent variable, ANOVA results indicate no significant differences among the means ($p > .05$). Table 30 summarizes the results of this analysis.

Table 30

Summary of ANOVA for Students' Perception of Goal Orientation Based on Those Teachers Clearly Identified as Incremental vs. Entity

<u>Source Ratio</u>	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between Groups	1	7.403	7.403	.162*
Within Groups	811	37126.711	45.779	
Total	812	37134.113		

*p > .05

Research Hypothesis Five:

Students' gender and perceived ability level will explain a significant amount of variance in students' perception of the classroom goal orientation.

The researcher used a similar design to test this hypothesis. Prior to running the ANOVA for tests of between subjects effects for gender, the Levene Test of Equality was conducted to check for violation of the Homogeneity of Variance Assumption. The Levene Test of Equality tested the null hypothesis that the error variance of the dependent variable (PALS scores) is equal across gender groups. The assumption was not violated ($p = .073$) in the current study.

Multiple regression procedures were conducted using two predictor variables (perceived ability level and gender) and one criterion variable (student perception of goal orientation in the classroom). Students' scores on the PALS instrument was the dependent variable in hypothesis five; students' gender and self-rating of ability were the

independent variables. A multiple linear regression was calculated predicting students' perception of goal orientation scores based on their gender and rating of ability. The regression equation was significant $F = 3.077 (2,1,147) p = .046$ with an adjusted R^2 of .004. This indicates that less than one percent of the variance in students' goal orientation is due to either students' gender or perceived ability. Again, while statistical significance was found for hypothesis five, practical significance is questionable. Table 31 displays the regression table related to this test.

Table 31

Regression Analysis: Students' Gender as Predictor of Variance in Students' Goal Orientation

<u>Source of Variation:</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
<u>Student Gender and Rating of Ability</u>					
Regression	282.31	2	141.16	3.08	.046
Residual	5263.54	1147	45.88		
Total	52905.34	1149			

Following the use of the simultaneous regression model, the step-wise regression model was used to determine the variable that was the most significant predictor of students' PALS scores. Independent variables considered in the equation were students' gender and rating of ability level. Gender was the predictor variable entered first in the analysis. Gender accounted for the greatest degree of significance in predicting students' PALS scores ($F (1,1,148) = .013, p < .05$). Table 32 presents the regression table related to this test.

Table 32

Students' Gender as Predictor of PALS Scores

<u>Source of Variation:</u> <u>Student Gender</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Regression	280.63	1	280.63	6.12	.013
Residual	52625.21	1148	45.84		
Total	52905.84	1149			

Summary

This study involved 63 secondary level social science teachers in northeast Kansas, and 1,214 students enrolled in social science classes during Spring 2006. Teachers and students were representative of large, medium, and small district sizes (N = 17). The study used three survey instruments: Theory of Intelligence Survey, Teacher Efficacy Survey, and Patterns of Adaptive Learning Scales (PALS): Perception of Classroom Goal Structure Survey. Descriptive statistics were calculated and reported for both teachers and students for all surveys.

Social science teachers participating in this study were primarily male, white, and teaching grades 9-12 at the secondary-level. The majority of the teacher participants were experienced in the field, with more than 11 years of professional experience. Teachers were reasonably distributed across size of school and grade levels.

Students participating in the study were primarily white and approximately equal in representation of gender. Most students were either 11th or 12th graders. The student sample was more diverse than the teacher sample, but still predominantly Caucasian. A

majority of the students reported being A to B students in their social science classes and having average to high ability.

Inferential statistics were used to test the five research hypotheses. Three hypotheses were tested with the Pearson Product Moment Correlation. Two hypotheses were tested with multiple regression techniques. Results indicate there is a statistically significant relationship between teachers' implicit beliefs about intelligence and teachers' self-efficacy. Statistical significance was also found for the relationship between teachers' self-efficacy and students' perception of the classroom goal orientations. Non-significant results were found for the relationship between teachers' implicit beliefs about intelligence and students' perceptions of goal orientations in the classroom. No statistical significance was found with regard to the ability to predict variance in students' perceptions of goal orientations based on a combination of teachers' beliefs about intelligence and teachers' self-efficacy. In addition, a non-significant result was found regarding students' perception of ability as a predictor of the variation in the students' perceptions of the classroom goal orientation. Significance was found for gender in predicting students' perceptions of classroom goal orientation; however, large sample sizes may be a factor in the finding.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

This chapter includes (1) discussion of the purpose of the study, (2) overview of the methodology, (3) summary and discussion of the results, (4) implications of the research study, and (5) summary and conclusion.

Purpose of the Study

The purpose of this study was to investigate the relationship between high school teachers' implicit beliefs about intelligence and self-efficacy, and students' perceptions of the goal orientation in the social science classroom. Although there is a preponderance of research linking students' implicit beliefs about intelligence to their goal orientation, there remains a gap in the literature insofar as the relationship between teachers' beliefs about intelligence and the impact of those beliefs on students' perceptions of the goal orientation in the classroom. This study sought to answer the following research questions:

1. Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and teacher self-efficacy?
2. Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the kind of goal orientation promoted in the classroom?
3. Is there a statistically significant relationship between teachers' self-efficacy and their students' perceptions of the kind of goal orientation promoted in the classroom?

4. Is there a statistically significant relationship between students' gender and perceived ability and students' perceptions of the kind of goal orientation promoted in the classroom?

Methodology

Data were collected during the Spring 2006 school year using the Theory of Intelligence Survey and Teacher Efficacy Survey (N = 63), and the Patterns of Adaptive Learning Scales (PALS): Perception of Classroom Goal Structures Survey, (N = 1,214) from 17 school districts in northeast Kansas.

The study collected descriptive data for both teachers and students, and in addition, tested five separate hypotheses. The first hypothesis was that teachers' implicit theories of intelligence are positively related to their self-efficacy. This hypothesis was tested using the Pearson Product Moment Correlation in which teachers' total scores on the Theory of Intelligence Survey were correlated with their total scores on the Teacher Efficacy Survey.

The study also sought to test the hypothesis that teachers' beliefs about intelligence are positively correlated to their students' perceptions of the classroom goal orientation. This hypothesis was tested using the Pearson Product Moment Correlation in which teachers' total scores on the Theory of Intelligence Survey were correlated with their students' total scores on the PALS Survey.

A third hypothesis, that there is a positive correlation between teachers' self-efficacy and their students' perceptions of the classroom goal orientation was tested with the Pearson Product Moment Correlation. Teachers' total self-efficacy scores, as

measured by the Teacher Efficacy Survey, was correlated with their students' total scores for perception of the classroom goal orientation, as measured by the PALS Survey.

The fourth hypothesis was that teachers' beliefs about intelligence and self-efficacy explains the variation of students' perception of the classroom goal orientation. A multiple regression analysis was conducted to test for the significance of these two variables' impact on students' perception of the classroom goal orientation.

The fifth hypothesis was that the two variables (students' gender and self-reported ability level) explain the variation of the students' perception of goal orientation scores. A multiple regression model was used to test for the impact of both students' gender and perception of ability level on students' perception of the classroom goal orientation. All five hypotheses for the study were tested at the significance level of $p = .05$.

Summary and Discussion of Results

This section of Chapter Five summarizes the results of the study, and includes a discussion of the results. It is organized around each of the four research questions that were the focus of the study.

Research Question #1

Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and teachers' levels of self-efficacy?

A statistically positive relationship was found between the two teacher variables. Teachers who possess incremental views about intelligence tend to possess higher levels of self-efficacy; teachers who possess entity views about intelligence tend to possess lower levels of self-efficacy.

The statistical evidence found for hypothesis one supports several key theoretical assumptions of the implicit beliefs about intelligence theory proposed by Dweck and colleagues (Dweck, 1986; Dweck, 1988; Dweck, 1999; Dweck, Chi & Hong, 1995; Ames, 1988; Ames & Archer, 1988). Once teachers adopt a theory of intelligence, it affects what they value, how they approach teaching tasks, and how they interpret and explain events that occur in the classroom. Teachers' views of intelligence provide a framework for attributions for success and failure, and orient teachers toward a host of either adaptive or maladaptive motivational patterns, involving various affective, cognitive, and behavioral processes.

Such motivational patterns manifest themselves in the kinds of goals teachers possess for both themselves and their students. According to Dweck, (Dweck,1999) one's theory of intelligence actually sets up particular goals (either mastery/learning or performance), and these goals elicit different patterns of motivation made evident in the day to day experiences of the individual. These motivational patterns reflect the belief systems teachers possess.

Examples of adaptive patterns of behavior associated with mastery/learning goals, (and incremental beliefs about intelligence) include: establishing and maintaining challenging goals; seeking, and not avoiding challenge; risking failure in order to improve; persisting when obstacles present themselves; and pursuing learning goals to increase competence.

The literature reviewed for this study clearly points to the link between adaptive motivation-related behaviors and incremental beliefs about intelligence. Teachers with incremental theories of intelligence would likely believe in both their own and

their students' abilities to be successful, regardless of past performance. Such teachers would demonstrate the value of effort in their specific responses to the challenges they face in the classroom. Incremental teachers are likely to exhibit strong resilience in the face of challenge in part because they are likely to have adopted learning goals themselves.

Incremental teachers are likely to model efficacious behavior on a day to day basis. Modeling efficacious behavior in the classroom on a daily basis provides students with specific examples of what it means to possess a learning orientation in the academic setting. Because incremental teachers are more likely to possess learning orientation goals for themselves, they may be willing to risk failure in their attempt to be the most effective teacher possible. Such teachers are less likely to be fearful of the instructional/classroom challenges that come naturally in the classroom.

These kinds of teachers may be more willing to try new instructional strategies and approaches in the classroom in order to improve both their own instructional effectiveness and their students' performance. Fundamental to such adaptive motivational approaches by incremental teachers is the inherent belief that they are capable of taking whatever steps necessary to teach all students effectively. For such teachers, challenges may appear as opportunities to test oneself in the face of difficulty. Motivating hard to reach students may be easier for incremental teachers in part because they themselves fundamentally believe that ability is not fixed and that effort is the key to reaching high levels of success in all endeavors. Likewise, these kinds of teachers are likely to receive support from building administrators and initiate crucial conversations with them about their educational goals and the self-

beliefs related to those goals. As a result of these collegial interactions, teachers are more likely to feel confident in dealing with the uncertainties of their work because they have more opportunities to learn as a result of sharing expertise and seeking advice from colleagues (Woolfolk & Hoy, 1990). Such behavioral patterns characterize teachers possessing significant levels of self-efficacy.

In contrast to the adaptive motivational approaches used by incremental teachers, entity teachers' motivational patterns are likely to be maladaptive. Since entity beliefs about intelligence are associated with performance goals, teachers who possess entity beliefs are likely to be motivated to adopt performance goals that work against the pursuit of challenge.

Such entity teachers are more likely, than incremental teachers are, to interpret negative outcomes and failures (self or student) as reflective of fixed abilities. Such an interpretation of failures may lead to a withdrawal of effort or debilitation in the face of obstacles. A belief in a fixed intelligence may raise teachers' concerns about how capable they are to effectively teach all students in the classroom, and may lead to defensive and helpless behavior, characteristic of low efficacy.

The current study found a positive relationship between teachers' beliefs about intelligence and their self-efficacy. The link between teachers' beliefs about intelligence and self-efficacy is understandable. Many of the same cognitive, affective and behavioral processes are involved in both constructs. It is reasonable to view oneself as efficacious if one believes fundamentally in the ability to improve one's own teaching effectiveness with persistence and effort. Hence, having a belief that intelligence and ability is malleable lends itself to believing in one's capacity to

do whatever is necessary to overcome the barriers and challenges associated with being an effective teacher.

Research Question #2

Is there a statistically significant relationship between teachers' implicit beliefs about intelligence and students' perceptions of the goal orientation promoted in the classroom?

Contrary to hypothesis two, teachers' theories of intelligence did not predict students' perception of classroom goal orientations. Although great variation existed among teachers' scores on the theories of intelligence scale, this variation did not significantly account for the variation in perceptions of classroom goal orientation students reported. The lack of association between teachers' views of intelligence and students' perception of classroom goal orientations may be related to the complexities of both teachers' beliefs about intelligence and their students' perception of the classroom goal orientations.

Teachers' beliefs about intelligence may very well be more complex than the nature-nurture distinction represented by Dweck and Henderson (1989). Although the simplicity of the Dweck and Henderson items make them attractive to researchers and study participants, and they have been used extensively in the investigation of students' theories of intelligence, it may be questionable whether the six items on the instrument truly capture the complexity of teachers' theories of intelligence. It is important to note that the literature discussed in Chapter Two, laying the foundation for the current study, focused on examining the relationship between students' theories of intelligence and those same students' goal orientations. The current study examined teachers' beliefs about intelligence and their students' perceptions of classroom goal orientations. The

multidimensional nature of both teachers' theories of intelligence and students' goal orientation may interact with specific student and school characteristics to influence both teachers' beliefs about intelligence and efficacy, and their students' perceptions of goal orientation.

Although the present study investigated several student attributes (gender, grades in class and perception of ability level), there may be additional student variables that interact with teacher's implicit beliefs regarding intelligence; further investigation of such influences would increase the understanding of such complex interactions. Examples of student characteristics worthy of investigation might include SES, history of success and failure in the classroom, parents' motivational patterns, students' own implicit beliefs about intelligence, and students' self-efficacy.

School-level factors may also play an important role in the non-significant finding for hypothesis two. Schools are complex social systems; and as a subculture of the larger society, consist of shared values, perceptions, and practices that collectively influence both teachers' and students' perceptions of intelligence, efficacy and goal orientation. Because schools operate within a larger culture, which provides both students and teachers with important messages with regard to the nature of the constructs examined in the current study, individual belief systems may be influenced indirectly by the culture in which one finds him/herself.

Now more than ever before, administrators, teachers and instructional leaders are held accountable for the success of all children in the classroom. The current emphasis placed on standards based instruction and performance, demonstration of proficiency on state mandated assessments, and closing the achievement gap so that no child is left

behind elevates the importance of performance goals for both teachers and students. The charge for all public schools to demonstrate adequate levels of student performance, in order to meet state and federal mandates and avoid suffering severe consequences, may mediate both teachers' and students' belief systems.

Dweck and colleagues developed the implicit beliefs about intelligence theory, and the relationship of those beliefs to one's goal orientation, prior to a time period in which student performance and accountability on state mandated assessments dominated the climate of educational systems. It is likely that performance goals mean different things to both teachers and students today than they did at the time Dweck's theory was developed. The current emphasis placed on performance goals for accountability purposes may serve to undermine both teachers' belief systems and their students' goal orientations. In essence, a school culture that is predominately performance oriented, as opposed to learning oriented, may have confounded the results for hypothesis two.

Research Question # 3

Is there a statistically significant relationship between teachers' self-efficacy and their students' perceptions of the kind of goal orientation promoted in the classroom?

This study found a statistically significant relationship between teachers' self-efficacy and their students' perceptions of goal orientation; however, this should be interpreted with caution. Only less than one percent of the variability in the students' perceptions of classroom goal orientation scores is associated with variability in the teacher self-efficacy scores. Practical significance is questionable, and likely due to the large student sample size. The amount of variance explained may be too small to warrant investments in school culture or teacher preparation.

The Gibson and Dembo efficacy measure used in the current study has been the most popular of the instruments used in assessing teachers' efficacy to date (Tschannen-Moran & Hoy, 2001). While several researchers have identified two separate factors (TE and PE) that measure separate dimensions of teacher self-efficacy, this has resulted in persistent measurement problems for those researchers seeking clarity with regard to this elusive construct. As identified in Chapter Three, the instrument used in the current study to assess teacher self-efficacy included both efficacy factors. Personal teaching efficacy (PE) is assumed to reflect teachers' individual beliefs with regard to their ability to positively impact student learning. Teaching efficacy (TE) is assumed to represent the belief of the teaching profession as a whole to impact student learning. For psychometric purposes, the current study utilized all 22 items on the Teacher Efficacy instrument (Gibson & Dembo, 1984), as instrument reliability is enhanced with more items than fewer items (Anastasi & Urbina, 1997). Although this study did not provide strong evidence for the relationship between teachers' self-efficacy (combining both TE and PE) and their students' perception of the goal orientation, both practical experience and the work of other researchers would suggest that there is a need for more thorough study of this question. While both efficacy factors have been used widely in the research on teacher self-efficacy, the (TE) sub-scale emphasizes environmental explanations for teachers' beliefs about self-efficacy. Further statistical analysis examining the two separate sub-scales of teacher self- efficacy would provide greater clarity with regard to the nature of the interaction between the two variables.

Research Question #4

Is there a statistically significant relationship between students' gender and perceived ability and students' perceptions of the kind of goal orientation promoted in the classroom?

Confidence in one's ability is a positive thing to have in a classroom situation, however, previous research has demonstrated that the level of confidence students bring into a learning situation doesn't necessarily help them when they run into difficulty (Dweck, 1999). Although it was hypothesized that students' self-perceptions of their ability would explain a significant level of variance in their perceptions of goal orientation in the classroom, the results demonstrated otherwise.

A plethora of research has shown that one's goal orientation, as related to implicit beliefs about intelligence, is not related to ability level. Students' ability appears to be less a factor in the determination of their perception of classroom goal orientation than their implicit belief regarding intelligence (Dweck, 1999; Dweck & Leggett, 1988). Additionally, research has shown that children who demonstrate helpless and mastery oriented responses have equal performance and ability backgrounds until failure occurs, they then tend to be equal in their achievement levels. The current study supports these earlier findings in that students' perceptions of the classroom goal orientation were not found to be significantly related to their perceptions of ability.

The researcher also hypothesized that students' gender would explain significant variation in the perception of the classroom goal orientation. Gender differences have been identified in studies conducted by Dweck (Dweck & Leggett, 1988) for eighth grade students. Girls were found significantly more likely than boys to hold an entity theory of

intelligence. Since entity theorists tend to possess performance goal orientations, it seemed reasonable to predict that a similar gender difference would present itself in the students' goal orientation scores.

Although gender did show statistical significance, less than one percent of the variation in PALS scores can be explained by way of this variable. Little practical significance can be assumed. The large student sample size may play some role in the statistical significance that was found.

A possible explanation for the small significance between gender and PALS scores found in this study may be related to the research method used. The overwhelming majority of earlier studies that have found significance for gender in classroom goal orientation used experimental designs, as opposed to the survey design used in the current study (Licht & Dweck, 1984). Thus, earlier findings involved measuring students' goal orientations in terms of observable behaviors and not responses to items on survey instruments. One of the limitations of survey research is that it captures individuals' responses to questions at one point in time. Survey research, while allowing for the description of behavior with measures such as those used in the current study, may simplify the interaction between the variables being studied. Research methods allowing for the measurement of observable behaviors in the classroom may provide more meaningful information about students' perceptions of goal orientation, and deeper insight into the complexity of the interaction between gender and perception of classroom goal orientation.

Implications of the Research Study

Research

While there is a great deal of research supporting the link between students' implicit theories of intelligence and their goal orientation (Dweck, 1986; Dweck, 1988; Dweck, 1999; Dweck, Chiu & Hong, 1995; Ames, 1988; Ames & Archer, 1988), the relationship between teachers' implicit theories of intelligence and their students' perceptions of the classroom goal orientation is less clear. The current study did not provide statistical evidence for a relationship between teachers' views about intelligence and their students' perceptions of goal orientation in the classroom. However, practical experience and previous research (Dweck, 1999; Licht & Dweck, 1984; Meece & Holt, 1993) supports additional investigations into the complex nature of teacher/student interactions with regard to these constructs.

Additional research on the relationship between teachers' goal orientation and their students' goal orientation is warranted. Perhaps teachers' goal orientations are more closely linked to their students' perceptions of the classroom goal orientation than are teachers' beliefs about intelligence. Teachers' goal orientation may be reflected in the kinds of instructional strategies teachers use in the classroom as well as the policies and procedures that are followed in the classroom on a day-to-day basis. Investigating the direct relationship between teachers' and students' goal orientation would provide valuable insight into role of goal structure on achievement motivation in the classroom.

The dominant research methods used in both implicit beliefs about intelligence and achievement goal theory may not reveal the complexity of the constructs under investigation. It may be the case that survey methods may not be capable of uncovering

this complexity. Forced-choice methods of measuring such fundamental belief systems as intelligence, self-efficacy and goal orientation may not be sufficiently adequate to uncover the true nature of teacher-student interactions that take place in the classroom context. Additional research, using alternative methods of data collection, would allow for a richer understanding of the nature of teachers' and students' belief systems, and how they interact on a day to day basis.

Using qualitative approaches to investigate such interactions holds promise for researchers to gain a clearer understanding of how teachers and students' beliefs develop in the classroom. Investigating such constructs using interviews, case studies, and observations of classroom interactions would allow researchers to understand not only if relationships exist between the variables in question, but also the processes by which teachers' and students' beliefs develop in the classroom context.

Additional research into the complexity of teacher/student interactions, using qualitative approaches, may uncover the processes by which teachers' implicit belief about intelligence and/or self-efficacy influence teachers' instructional practices. Perhaps instructional practices mediate the effects of teachers' belief systems about intelligence and self-efficacy. Such instructional practices worthy of investigation include patterns of: calling on students, responding to student answers, providing help, dealing with errors, providing feedback, and displaying tenacity.

Additional research examining the role of the school-wide culture, and its influence on both teachers' beliefs and students' goal orientations, is also needed. Examination of school-wide structures and policies that either promote mastery or performance goals would provide insight into the processes by which students come to

acquire their views about what it means to be successful in the academic environment. The use of qualitative approaches to more fully understand the impact of school-wide structures and policies on belief systems would allow researchers to examine and describe how classroom teachers create an educational environment where students develop particular kinds of goal orientations.

Practical

Both mastery/learning and performance goals are clearly necessary for success in an academic setting. However, students' over emphasis on performance goals has been found directly related to maladaptive behaviors such as giving up when difficulty arises, de-emphasizing effort, challenge avoidance, and other defensive strategies that interfere with challenge seeking (Dweck & Leggett, 1988). On the other hand, mastery goals are adaptive in that they are related to persistence, a sense of personal efficacy and hopefulness, seeking challenge and maintaining effort and effective strategies under failure.

In order for teachers to influence their students' goal orientations, and, hence, their students' opportunities for success, teachers must become cognizant of what their personal beliefs are regarding intelligence and self-efficacy, and how those beliefs impact students in the classroom. Helping teachers to become more aware of the personal beliefs they bring into the classroom sets the stage for valuable dialogue about how such beliefs impact students' motivation to learn. School administrators may want to consider offering teachers the opportunity to assess themselves on their implicit beliefs about intelligence, self-efficacy, and goal orientation. This may very well be the first step towards having honest conversations about the role of teachers' beliefs on student

achievement. Such conversations may be difficult ones to have with teachers for many reasons; however, avoiding discussions about the power of such teacher belief systems on student achievement only perpetuates the current gap between research and practice. Teachers who recognize their own system of beliefs about such constructs, and the potential impact of those beliefs on their students, are in a position to positively influence their students' beliefs about themselves, and thus motivate their students toward academic excellence.

In addition to becoming more aware of the implications of one's personal belief systems, teachers must model the very adaptive behaviors they wish to see in their students. Teachers must not assume their students fully understand the advantages for them in possessing strong self-efficacy, incremental beliefs about intelligence, and learning goals. Teachers must be willing to teach the value of effort explicitly to their students, on a day-to-day basis. Teachers must be courageous enough to have honest conversations with their colleagues about the role of effort in their own successes and failures in the classroom. Teachers who come to understand the impact of the belief systems discussed in this dissertation have an obligation to share that knowledge with their colleagues, the parents of the students they teach, as well as the public in general.

School systems need to organize themselves in ways that validate the importance of effort-based ability and learning goals. They can do this in many ways, including organizing professional development opportunities for teachers to learn about the implicit theory of intelligence, the role of efficacy and goal orientations on student achievement. When district leaders offer professional development experiences for teachers built around these topics, this sends a powerful message to administrators and teachers that

beliefs about intelligence, self-efficacy and goal orientation are important issues worthy of serious investigation.

District level leaders can guide teachers to examine policies and structures that unintentionally affect belief systems of both teachers and students. Such policies and structures might include practices related to grading, course offerings, competition, test/retest procedures, instruction and assessment. District leaders can support the efforts of teachers by forming curriculum for teachers to teach their students about effort, creating ways to acknowledge students and teachers who demonstrate perseverance, and in general validating the current research that supports a de-emphasis on performance goals to maximize opportunities for both teacher and student learning. It is imperative that individuals who find themselves in leadership positions become advocates of a school culture that promotes a balanced perspective regarding beliefs about intelligence and goal orientations, and an acknowledgement of the role of efficacy on both. When educational leaders willingly and openly address the motivation related issues described here teachers will become more comfortable in reflecting on their current beliefs and practices that impact students' belief systems and ultimately students' learning.

Summary and Conclusions

In summary, the current study leads to the following conclusions regarding teacher beliefs and student goal orientation in secondary-level social science classrooms:

1. Teachers possess both incremental and entity implicit theories regarding intelligence. Those with incremental theories are more likely to report higher levels of self-efficacy.

2. Students' perceptions of the classroom goal orientation do not simply reflect teachers' beliefs about intelligence or self-efficacy. Other factors, such as an over-arching emphasis on performance goals in the school culture and other student characteristics may affect students' perception of classroom goals.
3. Additional research investigating the relationship between teachers' beliefs about intelligence and self-efficacy and students' perceptions of goal orientation, using qualitative methodologies, would provide additional data in which to draw conclusions regarding the powerful relationship between teachers' and students' belief systems.

The present data points to new directions for research on teachers' belief systems and students' classroom goals. Intentional or not, implicit beliefs shape the ways teachers view themselves and their students. Examining teachers' theories of intelligence and levels of self-efficacy provide an additional level of data with which to draw from in understanding students' goal structures. Much research indicates that internal belief factors about intelligence, self-efficacy and goal orientation could account for students' differences in achievement motivation. However, the extent to which teachers' belief systems account for differences in students' motivation and achievement are questions that remain to be answered. Research in this field may provide food for thought and could be helpful to teachers examine their beliefs and practices in the classroom.

It may seem obvious to those in the field of education that students' academic motivation is tied closely to both teachers' and their own belief systems. The assumption that the powerful belief systems teachers and students create and hold to be true about themselves are important factors that impact their success or failure in all educational

endeavors may seem so reasonable that one might presume they have always been key components of the discussions around educational concerns. However, educational research and practice has failed in many ways to acknowledge the critical issues related to both teachers' and students' sense of self.

School reform is a critical national issue. But, reform practices, without first challenging the beliefs that underlie them, is unreasonable. The underlying philosophy behind the current No Child Left Behind (NCLB) legislation is meritorious, and few educators would disagree with the premise that all children deserve equal opportunities in their efforts to be successful in schools. Teachers and entire school systems will demonstrate the commitment to leaving no child left behind and achieving 21st Century standards when all stakeholders display both the willingness and courage to rethink what it means to be intelligent. Equally important, at this time when performance on state and national assessments figures prominently in instructional agendas, is the need for serious examination of the kinds of goal orientations promoted in teachers' classrooms. A school culture dominated by the belief that intelligence is dynamic, and not fixed, is one that communicates the conviction that all children truly are capable of learning. The kind of culture described here requires a commitment by all educational stakeholders to openly acknowledge that while many students have difficulty in school, this is most often not because students are incapable of performing successfully, but because students fail to believe that they capable.

Those district leaders, building administrators and teachers in our school systems will demonstrate such a commitment to leaving no child behind when they openly examine the beliefs, practices, policies and structures, at the classroom, building, and

district levels that either promote learning for all, or ensure that some students will be left behind. Undoubtedly, this is more complicated than collecting and analyzing student assessment data, but absolutely essential if we are truly committed to helping all students reach their academic potential.

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Appendices

Appendix A

Patterns of Adaptive Learning Scales: Perception of Classroom Goal Structure

Patterns of Adaptive Learning Scales: Perception of Classroom Goal Structure

The following questions are about this social science class and about the work you do in this class. Remember to say how you really feel. No one at school or home will see your answers.

Circle the number for each item to indicate how true each of these statements is for you.

Use the following scale to respond to each of the questions below.

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

IN THIS SOCIAL SCIENCE CLASS:

1. Trying hard is very important
1 2 3 4 5
2. How much you improve is really important
1 2 3 4 5
3. Really understanding the material is the main goal.
1 2 3 4 5
4. It's important to understand the work, not just memorize it.
1 2 3 4 5
5. Learning new ideas and concepts is very important.
1 2 3 4 5
6. It's OK to make mistakes as long as you are learning.
1 2 3 4 5

7. Getting good grades is the main goal.

1	2	3	4	5
Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

8. Getting right answers is very important.

1 2 3 4 5

9. It's important to get high scores on tests.

1 2 3 4 5

10. Showing others that you are not bad at class work is really important.

1 2 3 4 5

11. It's important that you don't make mistakes in front of everyone.

1 2 3 4 5

12. It's important not to do worse than other students.

1 2 3 4 5

13. It's very important not to look dumb.

1 2 3 4 5

14. One of the main goals is to avoid looking like you can't do the work.

1 2 3 4 5

*Used with permission: Midgley, C. et al. (2000)

Appendix B

Theory of Intelligence Survey

Theory of Intelligence Survey

People have different ideas about intelligence. Below are six statements that refer to views about intelligence. Read each one carefully. There are no right or wrong answers.

Use the following scale to respond to each of the questions.

Strongly disagree	Disagree	Sort of disagree	Sort of agree	Agree	Strongly agree
1.	2.	3.	4.	5.	6.

1. You have a certain amount of intelligence and you really cannot do much to change it.

1. 2. 3. 4. 5. 6.

2. Your intelligence is something about you that you cannot change very much.

1. 2. 3. 4. 5. 6.

3. You can learn new things, but you cannot really change your basic intelligence.

1. 2. 3. 4. 5. 6.

4. No matter who you are, you can change your intelligence a lot.

1. 2. 3. 4. 5. 6.

5. You can always greatly change how intelligent you are.

1. 2. 3. 4. 5. 6.

6. No matter how much intelligence you have, you can always change it quite a bit.

1. 2. 3. 4. 5. 6.

*Used with permission: Dweck & Henderson (1989).

Appendix C
Teacher Efficacy Survey

Teacher Efficacy Survey

A number of statements about organizations, people and teaching are presented below. The purpose is to gather information regarding the actual attitudes of educators concerning these statements. There are no correct or incorrect answers. I am interested only in your frank opinions. Your responses will remain confidential.

INSTRUCTIONS: Please indicate your personal opinion about each statement by circling the appropriate response to each statement.

Strongly disagree	Moderately disagree	Disagree slightly	Agree slightly	Moderately agree	Strongly agree
1	2	3	4	5	6

1. When a student does better than usually, many times it is because I exert a little extra effort.

1 2 3 4 5 6

2. The hours in my class have little influence on students compared to the influence of their home environment.

1 2 3 4 5 6

3. The amount a student can learn is primarily related to family background.

1 2 3 4 5 6

4. If students aren't disciplined at home, they aren't likely to accept any discipline.

1 2 3 4 5 6

5. I have enough training to deal with almost any learning problem.

1 2 3 4 5 6

6. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.

1 2 3 4 5 6

Strongly disagree	Moderately disagree	Disagree slightly	Agree slightly	Moderately agree	Strongly agree
1	2	3	4	5	6

7. When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student.

1 2 3 4 5 6

8. When I really try, I can get through to most difficult students.

1 2 3 4 5 6

9. A teacher is very limited in what he/she can achieve because a student's home environment has a large influence on his/her achievement.

1 2 3 4 5 6

10. Teachers are not a very powerful influence on student achievement when all factors are considered.

1 2 3 4 5 6

11. When the grades of my students improve, it is usually because I found more effective approaches.

1 2 3 4 5 6

12. If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.

1 2 3 4 5 6

13. If parents would do more for their children, I could do more.

1 2 3 4 5 6

14. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.

1 2 3 4 5 6

Strongly disagree	Moderately disagree	Disagree slightly	Agree slightly	Moderately agree	Strongly agree
1	2	3	4	5	6

15. The influences of a student's home experiences can be overcome by good teaching.

1 2 3 4 5 6

16. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.

1 2 3 4 5 6

17. Even a teacher with good teaching abilities may not reach many students.

1 2 3 4 5 6

18. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.

1 2 3 4 5 6

19. If I really try hard, I can get through to even the most difficult or unmotivated students.

1 2 3 4 5 6

20. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment.

1 2 3 4 5 6

21. Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.

1 2 3 4 5 6

22. My teacher training program and/or experience has given me the necessary skills to be an effective teacher.

1 2 3 4 5 6

*Used with permission: Gibson & Dembo (1984).

Appendix D

Student Demographic Questionnaire

Student Demographic Questionnaire

Please respond to the following items about yourself. **Your responses will not be identified with your name.**

(1) Gender:

Male _____

Female _____

(2) Race/Ethnicity:

Caucasian _____

African American _____

Hispanic _____

Asian American _____

American Indian/Alaskan _____

Other _____

(3) Grade Level:

Ninth _____

Tenth _____

Eleventh _____

Twelfth _____

(4) Grades in Social Science Class:

Mostly A's _____

Mostly B's _____

Mostly C's _____

Mostly D's _____

Below D's _____

(5) How would you rate your ability level in this subject compared to other students in this class on the 5-point scale below?

One of the lowest

1

2

3

4

One of the highest

5

Appendix E
Teacher Demographic Questionnaire

Teacher Demographic Questionnaire

Please respond to the following items about yourself. **Your responses will not be identified with your name.**

(6) Gender:

Male _____

Female _____

(7) Race/Ethnicity:

Caucasian _____

African American _____

Hispanic _____

Asian American _____

American Indian/Alaskan _____

Other _____

(8) Years of Teaching:

0-5 _____

6-10 _____

11-15 _____

Over 15 _____

(9) Grade Level of Social Science Class:

Ninth _____

Tenth _____

Eleventh _____

Twelfth _____

Mixed _____

Appendix F
Certificate of Informed Consent

Appendix G

Protocol for Survey Distribution

Protocol for Survey Distribution

The project in which you are being asked to participate in, is part of a study of motivation in high school social science classrooms. Mary Catherine Siebert, a doctoral student at Kansas State University, is doing this study. It is part of her doctoral dissertation. From past studies, it has been found that the best way to understand motivation in the classroom is to ask students about their ideas in regard to what is happening in the classroom.

I have a survey of 14 items that ask you questions about yourself as you experience education in this classroom. It should take about 10 minutes for you to complete the survey.

Before you complete the survey, you must sign a consent form that shows you understand what is being asked of you today.

I want you to know that you are not required to participate in this study. Your participation does not relate to your grade in this social science class. I also want to assure you that your responses are confidential-no one will see your responses except the researcher.

Hand out the consent forms. Have students sign them and detach the bottom section that contains the information about the research project.

Collect the consent forms prior to handing out the surveys. Keep them in a pile to send along with the surveys.

The researcher will need information on who participated in the study, therefore, there is a short student demographic form for you to fill out, along with the actual survey.

Hand out the Student Demographic Questionnaire now, along with the actual survey.

Does anyone have any questions? Please raise your hand if you have any questions. I will come to your desk and answer your questions. When you have completed your forms, remain quiet. I will collect the forms.

Collect the surveys. Be certain to staple the Student Demographic Questionnaire to the Patterns of Learning Scales survey.

*** Hand out to teachers the Teacher Demographic Questionnaire and the Theories of Intelligence Survey and Teacher Efficacy Survey. Teachers complete their surveys.*

Staple Teacher Demographic form to the two teacher surveys.

Place all information in packet and return to Mrs. Siebert

Appendix H
Frequency Distribution for Item Response Scores for
Theory of Intelligence Survey

Frequency Distribution for Item Responses for

Theory of Intelligence Survey

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
1.	You have a certain amount of intelligence and you really can't do much to change it.	1	8	12.9	12.9
		2	25	40.3	53.2
		3	11	17.7	71.0
		4	13	21.0	91.9
		5	5	8.1	100.0
		6	0	0	
		Total	62	100.0	
2.	Your intelligence is something about you that you cannot change very much.	1	9	14.5	14.5
		2	22	35.5	50.0
		3	13	21.0	71.0
		4	14	22.6	93.5
		5	4	6.5	100.0
		6	0	0	
		Total	62	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
3.	You can learn new things but you cannot really change your basic intelligence	1	7	11.3	11.3
		2	21	33.9	45.2
		3	15	24.2	69.4
		4	13	21.0	90.3
		5	6	9.7	100.0
		6	0	0	
		Total	62	100.0	
4.	No matter who you are, you can change your intelligence a lot.	1	2	3.2	3.2
		2	8	12.9	16.1
		3	12	19.4	35.5
		4	22	35.5	71.0
		5	13	21.0	91.9
		6	5	8.1	100.0
		Total	62	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
5.	You can always greatly change how intelligent you are.	1	1	1.6	1.6
		2	12	19.4	21.0
		3	16	25.8	46.8
		4	18	29.0	75.8
		5	12	19.4	
		6	3	4.8	
		Total	62	100.0	95.2
				100.0	
6.	No matter how much intelligence you have, you can always change it quite a bit.	1	2	3.2	3.2
		2	10	16.1	19.4
		3	14	22.6	41.9
		4	22	35.5	77.4
		5	11	17.7	95.2
		6	3	4.8	100.0
		Total	62	100.0	

Appendix I
Frequency Distribution for Item Response Scores for
Teacher Efficacy Survey

Frequency Distribution for Item Response Scores for
Teacher Efficacy Survey

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
1.	When a student does better than usually, many times it is because I exert a little extra effort.	1	-	-	-
		2	4	6.6	21.3
		3	9	14.8	70.5
		4	30	49.2	93.4
		5	14	23.0	100.0
		6	4	6.6	
		Total	61	100.0	
2.	The hours in my class have little influence on students compared to the influence of their home environment.	1	2	3.3	3.3
		2	11	18.0	21.3
		3	10	16.4	37.7
		4	19	31.1	68.9
		5	16	26.2	95.1
		6	3	4.9	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
3.	The amount a student can learn is primarily related to family background.	1	9	14.8	14.8
		2	10	16.4	31.1
		3	19	31.1	62.3
		4	9	14.8	77.0
		5	12	19.7	96.7
		6	2	3.3	100.0
		Total	61	100.0	
4.	If students aren't disciplined at home, they aren't likely to accept any discipline.	1	2	3.3	3.3
		2	7	11.5	14.8
		3	14	23.0	37.7
		4	15	24.6	62.3
		5	18	29.5	91.8
		6	5	8.2	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
5.	I have enough training to deal with almost any learning problem.	1	5	8.2	8.2
		2	9	14.8	23.0
		3	13	21.3	44.3
		4	17	27.9	72.1
		5	14	23.0	95.1
		6	3	4.9	100.0
		Total	61	100.0	
6.	When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	1	-	-	-
		2	-	-	-
		3	3	4.9	4.9
		4	14	24.6	29.5
		5	36	59.0	88.5
		6	7	11.5	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
7.	When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student.	1	-	-	-
		2	3	4.9	4.9
		3	16	26.2	31.1
		4	26	42.6	73.8
		5	14	23.0	96.7
		6	2	3.3	100.0
		Total	61	100.0	
8.	When I really try, I can get through to most difficult students.	1	-	-	-
		2	-	-	-
		3	10	16.4	16.4
		4	23	37.7	54.1
		5	23	37.7	91.8
		6	5	8.2	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
9.	A teacher is very limited in what he/she can achieve because a student's home environment has a large influence on his/her achievement.	1	2	3.3	3.3
		2	8	13.3	16.7
		3	15	25.0	41.7
		4	19	31.7	73.3
		5	14	23.3	96.7
		6	2	3.3	100.0
		Total	60	100.0	
10.	Teachers are not a very powerful influence on student achievement when all factors are considered.	1	14	23.0	23.0
		2	19	31.1	54.1
		3	23	37.7	91.8
		4	5	8.2	100.0
		5	-	-	
		6	-	-	
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
11.	When the grades of my students improve, it is usually because I found more effective approaches.	1	-	-	-
		2	2	3.3	3.3
		3	11	18.0	21.3
		4	30	49.2	70.5
		5	14	23.0	93.4
		6	4	6.6	100.0
		Total	61	100.0	
12.	If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.	1	-	-	-
		2	3	4.9	4.9
		3	6	9.8	14.8
		4	33	54.1	68.9
		5	16	26.2	95.1
		6	3	4.9	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
13	If parents would do more for their children, I could do more.	1	1	1.7	1.7
		2	1	1.7	3.3
		3	6	10.0	13.3
		4	19	31.7	45.0
		5	21	35.0	80.0
		6	12	20.0	100.0
		Total	60	100.0	
14.	If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1	-	-	-
		2	1	1.6	1.6
		3	5	8.2	9.8
		4	35	57.4	67.2
		5	16	26.2	93.4
		6	4	6.6	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
15.	The influences of a students' home experiences can be overcome by good teaching.	1	2	3.3	3.3
		2	4	6.6	9.8
		3	9	14.8	24.6
		4	24	39.3	63.9
		5	18	29.5	93.4
		6	4	6.6	100.0
		Total	61	100.0	
16.	If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.	1	-	-	-
		2	1	1.6	1.6
		3	3	4.9	6.6
		4	14	23.0	29.5
		5	31	50.8	80.3
		6	12	19.7	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
17.	Even a teacher with good teaching abilities may not reach many students.	1	5	8.2	8.2
		2	9	14.8	23.0
		3	9	14.8	37.7
		4	19	31.1	68.9
		5	11	18.0	86.9
		6	8	13.1	100.0
		Total	61	100.0	
18.	If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	1	-	-	-
		2	3	4.9	4.9
		3	9	14.8	19.7
		4	28	45.9	65.6
		5	16	26.2	91.8
		6	5	8.2	100.0
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
19.	If I really try hard, I can get through to even the most difficult or unmotivated students.	1	2	3.3	3.3
		2	3	5.0	8.3
		3	9	15.0	23.3
		4	25	41.7	65.0
		5	16	26.7	91.7
		6	5	8.3	100.0
		Total	60	100.0	
20.	When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment.	1	2	3.3	3.3
		2	15	24.6	27.9
		3	18	29.5	57.4
		4	19	31.1	88.5
		5	7	11.5	100.0
		6	-	-	
		Total	61	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
21.	Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.	1	5	8.2	8.2
		2	15	24.6	32.8
		3	12	19.7	52.5
		4	19	31.1	83.6
		5	9	14.8	98.4
		6	1	1.6	100.0
		Total	61	100.0	
22.	My teacher training program and/or experience has given me the necessary skills to be an effective teacher.	1	1	1.6	1.6
		2	8	13.1	14.8
		3	6	9.8	24.6
		4	9	14.8	39.3
		5	27	44.3	83.6
		6	10	16.4	100.0
		Total	61	100.0	

Appendix J

Means and Standard Deviations for all Students' PALS Scores Based on Demographic Variables Per Sub-Scale

Means and Standard Deviations for all Students' PALS Scores Based on Demographic Variables Per Sub-Scale

Gender	PALS Score	<u>M</u>	<u>SD</u>
Male	Approach Sub-scale (3-15)	6.27	2.51
	Avoidance Sub-scale (5-25)	15.57	4.72
	Mastery Sub-scale (6-30)	24.79	3.90
	PALS Total Score (14-70)	46.61	6.51
Female	Approach Sub-scale (3-15)	6.17	2.38
	Avoidance Sub-scale (5-25)	15.89	4.85
	Mastery Sub-scale (6-30)	25.50	3.31
	PALS Total Score (14-70)	47.60	7.02

Means and Standard Deviations of Students' Total PALS Scores and Sub-Scale Scores
for Race/Ethnicity

Race/Ethnicity	PALS Score	<u>M</u>	<u>SD</u>
Caucasian	Approach Sub-scale (3-15)	6.32	2.41
	Avoidance Sub-scale (5-25)	15.85	4.72
	Mastery Sub-scale (6-30)	25.14	3.49
	PALS Total Score (14-70)	47.30	6.77
African American	Approach Sub-scale (3-15)	5.79	2.44
	Avoidance Sub-scale (5-25)	15.22	4.70
	Mastery Sub-scale (6-30)	25.56	3.71
	PALS Total Score (14-70)	46.58	6.71
Hispanic	Approach Sub-scale (3-15)	5.80	2.23
	Avoidance Sub-scale (5-25)	15.20	4.69
	Mastery Sub-scale (6-30)	25.58	3.50
	PALS Total Score (14-70)	46.57	6.41

(table continues)

Race/Ethnicity	PALS Score	<u>M</u>	<u>SD</u>
Asian American	Approach Sub-scale (3-15)	6.64	2.95
	Avoidance Sub-scale (5-25)	16.41	5.03
	Mastery Sub-scale (6-30)	24.73	4.30
	PALS Total Score (14-=70)	47.77	6.95
American Indian/Alaskan	Approach Sub-scale (3-15)	5.91	1.70
	Avoidance Sub-scale (5-25)	14.82	4.87
	Mastery Sub-scale (6-30)	25.09	4.85
	PALS Total Score (14-=70)	45.82	7.61
Other	Approach Sub-scale (3-15)	6.35	2.68
	Avoidance Sub-scale (5-25)	15.87	5.14
	Mastery Sub-scale (6-30)	24.46	4.19
	PALS Total Score (14-=70)	46.82	6.88

Means and Standard Deviations of Students' Total PALS Scores and Sub-Scale Scores
for Grade Level of Student

Grade Level	PALS Scores	<u>M</u>	<u>SD</u>
9th	Approach Sub-scale (3-15)	5.95	2.24
	Avoidance Sub-scale (5-25)	15.43	4.77
	Mastery Sub-scale (6-30)	25.54	3.47
	PALS Total Score (14-70)	46.89	6.59
10th	Approach Sub-scale (3-15)	6.21	2.49
	Avoidance Sub-scale (5-25)	15.45	4.93
	Mastery Sub-scale (6-30)	25.36	3.75
	PALS Total Score (14-70)	47.02	6.84
11th	Approach Sub-scale (3-15)	6.30	2.49
	Avoidance Sub-scale (5-25)	15.89	4.79
	Mastery Sub-scale (6-30)	24.89	3.42

PALS Total Score (14-70) 47.12 7.01

(table continues)

Grade Level	PALS Scores	<u>M</u>	<u>SD</u>
12th	Approach Sub-scale (3-15)	6.49	2.54
	Avoidance Sub-scale (5-25)	16.14	4.63
	Mastery Sub-scale (6-30)	24.90	4.04
	PALS Total Score (14-70)	47.50	6.57

Means and Standard Deviations of Students' Total PALS Scores and Sub-Scale Scores
for Grades in Social Science Class

Grade	PALS Score	<u>M</u>	<u>SD</u>
Mostly A's	Approach Sub-scale (3-15)	5.93	2.38
	Avoidance Sub-scale (5-25)	15.41	4.87
	Mastery Sub-scale (6-30)	25.72	3.40
	PALS Total Score (14-70)	47.08	6.83
Mostly B's	Approach Sub-scale (3-15)	6.39	2.55
	Avoidance Sub-scale (5-25)	16.06	4.75
	Mastery Sub-scale (6-30)	25.23	3.38
	PALS Total Score (14-70)	47.69	7.09
Mostly C's	Approach Sub-scale (3-15)	6.42	2.44
	Avoidance Sub-scale (5-25)	15.91	4.69
	Mastery Sub-scale (6-30)	24.36	4.02
	PALS Total Score (14-70)	46.68	6.36

(table continues)

Grade	PALS Score	<u>M</u>	<u>SD</u>
Mostly D's	Approach Sub-scale (3-15)	6.68	2.10
	Avoidance Sub-scale (5-25)	15.85	4.67
	Mastery Sub-scale (6-30)	23.63	4.02
	PALS Total Score (14-70)	46.18	5.68
Below D's	Approach Sub-scale (3-15)	6.46	2.96
	Avoidance Sub-scale (5-25)	14.77	4.57
	Mastery Sub-scale (6-30)	22.23	4.80
	PALS Total Score (14-70)	43.46	7.29

Appendix K

Frequency Distribution for Item Response Scores for PALS Survey

Frequency Distribution for Item Responses for
PALS Survey

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
1.	Trying hard is very important.	1	14	1.2	1.2
		2	25	2.1	3.2
		3	19	14.9	18.1
		4	438	36.1	54.1
		5	557	45.9	100.0
		Total	1212	100.0	
2.	How much you improve is really important	1	12	1.0	1.0
		2	31	2.6	3.5
		3	197	16.3	19.8
		4	478	39.4	59.2
		5	494	40.8	100.0
		Total	1212	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
3.	Really understanding the material is the main goal.	1	10	.8	.8
		2	17	1.4	2.2
		3	183	15.1	17.3
		4	481	39.7	57.1
		5	520	42.9	100.0
		Total	1211	100.0	
4.	It's important to understand the work, not just memorize it.	1	21	1.7	1.7
		2	43	3.5	5.3
		3	170	14.0	19.3
		4	425	35.1	54.5
		5	551	45.5	100.0
		Total	1210	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
5.	Learning new ideas and concepts is very important.	1	7	.6	.6
		2	28	2.3	2.9
		3	243	20.0	22.9
		4	509	42.0	64.9
		5	425	35.1	100.0
		Total	1212	100.0	
6.	It's OK to make mistakes as long as you are learning.	1	18	1.5	1.5
		2	31	2.6	4.0
		3	158	13.0	17.1
		4	441	36.4	53.5
		5	564	46.5	100.0
		Total	1212	100.0	
7.	Getting good grades is the main goal.	1	394	32.5	32.5
		2	427	35.3	67.8
		3	282	23.3	91.1
		4	68	5.6	96.7
		5	40	3.3	100.0
		Total	1211	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
8.	Getting right answers is very important.	1	305	25.2	25.2
		2	465	38.5	63.7
		3	339	28.0	91.7
		4	79	6.5	98.3
		5	21	1.7	100.0
		Total	1209	100.0	
9.	It's important to get high scores on tests.	1	466	38.5	38.5
		2	459	37.9	76.4
		3	225	18.6	95.0
		4	39	3.2	98.3
		5	21	1.7	100.0
		Total	1210	100.0	
10	Showing others that you are not bad at class work is really important.	1	126	10.4	10.4
		2	297	24.5	34.9
		3	468	38.6	73.6
		4	216	17.8	91.4
		5	104	8.6	100.0
		Total	1211	100.0	

(table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
11.	It's important that you don't make mistakes in front of everyone.	1	88	7.3	7.3
		2	179	14.8	22.1
		3	401	33.1	55.2
		4	304	25.1	80.3
		5	238	19.7	100.0
		Total	1210	100.0	
12.	It's important not to do worse than other students.	1	104	8.6	8.6
		2	262	21.7	30.2
		3	422	34.9	65.1
		4	228	18.8	84.0
		5	194	16.0	100.0
		Total	1210	100.0	
13	It's very important not to look dumb.	1	156	12.9	12.9
		2	209	17.3	30.2
		3	370	30.6	60.8
		4	238	19.7	80.5
		5	236	19.5	100.0

Total 1209 100.0 (table continues)

Item no.	Item	Response Option	<u>n</u>	%	Cumulative %
14	One of the main goals is to avoid looking like you can't do the work.	1	115	9.5	9.5
		2	204	16.9	26.4
		3	397	32.8	59.2
		4	244	20.2	79.3
		5	250	100.0	100.0
		Total	1210		

