University of Wisconsin- Whitewater
Whitewater, Wisconsin
Graduate School

Metacognition and Student Attitudes toward Self-Efficacy, Ability Beliefs, and Learning Targets

A Project Submitted in Partial Fulfillment
Of the Requirements of the
Master of Science in Education – Professional Development

Jaclyn R. Ford
July 18, 2015

This Capstone Project was approved by:

Advisor: _____
Dr. Scott Peters

Seminar Instructor: _____
Dr. Liesl Gapinski

Table of Contents

Appendix

List of Tables

Abstract

Metacognition is a key component of effective learning, yet the explicit instruction of metacognitive routines, strategies, and habits can be difficult to negotiate and incorporate into daily instruction. Donovan, Bransford, and the National Research Council's paper *How Students Learn* (2005) shows that development of self-regulatory practices, such as metacognition, improves students' self-efficacy, beliefs regarding the malleable nature of ability, and attitudes towards academic subjects. This action research project examined how the metacognitive self-regulatory routine of using daily learning targets to focus students' efforts and self-monitor affect students' perceptions of ability (entity vs. incremental), self-efficacy in Spanish language learning, and attitudes towards the process of using daily and chapter learning targets to self-assess. The hypothesis that the use of daily learning targets as a measure of self-assessed proficiency and progress in the high school Spanish III classroom will enhance students' perceptions of self-efficacy in Spanish language learning, their concepts of ability, and their attitudes towards daily learning targets was tested using the students in my three sections of my Spanish III courses at the high school level throughout first semester of the 2014-2015 school year. Students' attitudes and changes in attitudes were measured and monitored via a questionnaire using a 5-response item Likert scale that was administered at the beginning and at the end of the school semester. The data collected via the questionnaire was also examined in relation to students' actual performance as measured by letter grade for the semester.

Chapter One

Introduction

Throughout the four years my teaching career, I have noticed that many of my struggling students are not self-sufficient learners. They are often reliant on teachers for the information they need in order complete a task, when what they really need is to develop the skills necessary to complete academic work and think logically on their own. Sperling, Ramsay, Richmond, and Klapp (2012) found metacognition to be a significant predictor of academic achievement as determined by GPA. Students need to become self-sufficient learners so that they learn function efficiently and independently once they move beyond formal education. In order for students to become self-sufficient learners, they need to develop the self-regulatory skills of setting learning goals, continually assessing their own learning, adjusting the strategies and approaches they employ to meet their goals, and reflecting upon the knowledge and skills gained as well as the entire learning process. How often and aptly students employ these strategies may depend upon their attitudes toward them and perceived utility of them.

Self-regulated learning, which greatly involves the use of metacognitive processes and strategies, provides students with the tools necessary to monitor and maintain control of their learning processes and fosters more effective and efficient learning in students (Bandura, 1988; Everson et al., 1997; Paris & Newman, 1990; Pintrich, 2002; Schunk, 1990; Zimmerman, 1990). As students measure their progress towards achieving an academic goal and observe satisfactory progress, they experience positive associations between effort and ability and increased self-efficacy (Costa & Kallick, 2008; Schunk, 1990). Students who employ self-regulated learning techniques are also likely to view ability as elastic, as something they have control over, which causes them to be more inclined to put forth greater amounts of time and effort towards

achieving academic goals, increasing intelligence, and improving ability and skills (Bandura, 1986; Costa & Kallick, 2008; Schunk, 1990). As students put forth greater effort, monitor their learning, make adjustments to strategies and approaches, and observe growth and progress, they will likely develop positive attitudes towards school or the targeted school subject (Schunk, 1990).

Through an action research project, I aim to address the following question: Does the implementation of the metacognitive practice of using daily learning targets to self-monitor progress and ability affect students' perceptions of and attitudes towards self-efficacy with the Spanish language, ability beliefs (incremental vs. entity), and the use of daily learning targets in class. I hypothesized that the integration of daily metacognitive reflection and self-assessment using daily learning targets/objectives into my high school Spanish III classes would enhance students' perceptions of self-efficacy and ability beliefs and improve their attitudes towards daily learning targets.

Chapter Two

Review of Literature

Benefits that students who employ self-regulatory learning practices, such as metacognition and goal-monitoring, receive include: positive association between effort and ability and a heightened sense of self-efficacy (Costa & Kallick, 2008; Schunk, 1990); increased likelihood of viewing intelligence or ability as elastic (Bandura, 1986; Costa & Kallick, 2008; Schunk, 1990); and development of positive attitudes towards academics (Schunk, 1990). The following literature review will discuss self-regulated learning, metacognition, measuring attitudes, student attitudes toward achievement, and beliefs about ability and intelligence.

Self-Regulated Learning

There are many names and labels associated with the developmental trend of the self-monitoring of cognitive processes, but regardless of theoretical viewpoint, Pintrich (2002) found that as students become increasingly aware of their own thinking, knowledgeable about cognition, and then act on that awareness and knowledge, they tend to learn better. Self-regulation of learning processes involves the establishment of learning-goals, self-monitoring of progress towards those goals, awareness of areas of personal strength and weakness, knowledge of instructional strategies, modification of learning strategies depending upon the goal, situation, perceived self-efficacy, and reflection upon current level of progress (Bandura, 1988; Schunk, 1990; Zimmerman, 1990).

Everson, Tobias, and Laitusis (1997), Paris and Newman (1990), and Pintrich (2002) suggest that self-regulation is fundamental to the development of academic expertise because both expert learners and self-regulated learners often possess the following qualities: awareness of gaps in their knowledge and understanding, gained through self-reflection; they set goals for

themselves and monitor their progress toward achieving those goals; they are aware of themselves as learners; they employ metacognitive practices before, during, and after learning; and they are knowledgeable about and utilize specific strategies that may help them increase their understanding and ability. An additional benefit of self-regulated learning, students who are self-regulated approach learning opportunities with goals and a sense of high self-efficacy and realize greater levels of academic achievement (Schunk, 1990; Zimmerman & Bandura, 1994).

Zimmerman and Bandura (1994) conducted a study of the self-regulatory variables related to final course grades of 95 college freshman between the ages of seventeen and twenty enrolled in a quarterly writing course. The researchers used a path analysis to study the relationship amongst self-efficacy beliefs regarding academic attainment, self-regulation of writing, academic goals, and self-established standards for satisfactory achievement. Forty-eight of the students were enrolled in an advanced writing class and 47 were in a regular writing class. Zimmerman and Bandura (1994) developed the Writing Self-Regulatory Efficacy Scale, which consisted of two scales; one intended to assess self-efficacy beliefs in relation to self-regulation of writing activities and the other to measure self-efficacy in relation to beliefs about academic achievement in the course. The first scale included 25 items intended to measure students' perceived ability to (a) implement academic writing strategies, such as planning, organizing, and revising; (b) actualize the creative components of writing; and (c) effectively manage their time, assignments, and motivation. Students rated their perceived self-efficacy for each of the 25 items using a 7-point scale, on which a 7 represented a belief that the student could perform very well. The researchers used the second scale to measure self-efficacy for academic attainment. For this scale, students rated their beliefs regarding the certainty or uncertainty with which they could achieve each of the twelve academic grades ranging from *A* to *F*, including + and – gradations.

The students also completed a 7-point scale for the second scale, with a value of 7 reflecting a high certainty that the specific grade could be achieved. In addition to the Writing Self-Regulatory Efficacy Scale, students completed a 7-point scale to indicate what their level of satisfaction would be for each of the twelve grade levels (*A* through *F*). A score of 7 would indicate a very satisfied response to the indicated grade. Students completed the scales at the beginning of the quarter and provided their SAT verbal aptitude scores as well. Course instructors provided the researchers with the final grades for the quarter as a measure of the students' level of achievement in writing. The authors found that perceived self-regulatory efficacy for writing significantly influenced perceived self-efficacy for academic achievement and self-evaluative standards, which were linked to goals of earning a high grade. Students' reported self-efficacy of academic achievement was also positively associated with grade goals, self-evaluative standards, and academic achievement in the course. Zimmerman and Bandura (1994) discovered that students in the advanced sections of the writing course had higher verbal aptitude as measured by SAT scores and higher sense of self-regulatory efficacy for writing than students in the regular sections of the course. As Zimmerman and Bandura (1994) hypothesized, their study produced results that suggest that a student's perceived ability to regulate his or her own learning predicts self-efficacy for academic achievement, which, in turn, is linked to actual levels of actual achievement.

The establishment of learning-goals and metacognitive thinking (reflection upon the thought processes and strategies employed by oneself) are necessary components of self-regulated learning because they allow students to learn more effectively and strategically and take on the role of agent and expert (Everson et al., 1997). As students work toward clearly articulated learning-goals, they monitor their progress and adjust strategies based on

metacognitive reflections, and in doing so they can see marked progress towards their goal and development of the intended knowledge, understanding, or skill. When students experience repeated satisfactory goal progress, they begin to positively associate effort, ability, and strategic learning and gain enhanced self-efficacy (Costa & Kallick, 2008; Schunk, 1990). As students note their growth and development, they may come to conceive of ability as an elastic entity. When people deem their intelligence or ability to be flexible, with the potential to grow and change incrementally, they are much more inclined to persist and put forth time and energy toward improving their level of mastery and toward increasing their understanding of the content and awareness of their learning and thinking processes (Bandura, 1986; Costa & Kallick, 2008; Schunk, 1990).

Metacognition

Without the metacognitive aspect of self-regulation, learners experience a lack of motivation and self-efficacy because metacognition allows students the opportunity to conceive of themselves as agents with the capacity and choice to regulate and maintain control of their learning (McCombs & Marzano, 1990). Metacognition is the ability to the monitor and manage one's own thinking before, during, and after thinking, involves an understanding about cognition in general, and is considered a subcomponent of self-regulated learning (Anderson, 2002; Pintrich, 2002; Schraw, 1998). Metacognitive practices allow learners to improve academic performance and gain a greater awareness of their learning processes and potential (Anderson, 2002; McCombs & Marzano, 1990; Pintrich, 2002; Schraw, 1998). In the report *How People Learn: Brain, Mind, Experience, and School*, Bransford, Brown, and Cocking (1999) synthesized the existing research on learning processes from the fields of neuroscience, cognitive and social psychology, human development, and emerging technologies. The primary focus of this report

was to identify the processes and environments in which learning most effectively takes place. The editors highlighted the necessity of a metacognitive approach to learning and instruction in which students monitor their own progress as they work toward achieving learning goals. Through the synthesis of existing research, Bransford et al. (1999) concluded that metacognitive approaches to learning, including knowledge and appropriate use of various learning strategies and self-monitoring, appear to be directly related to the transfer of learning from one content area to others. As students develop understanding of the cognitive processes in relation to their learning and make adjustments to their habits and the strategies they employ based on evaluative reflection of their progress, they can make accurate, evidence-based conclusions regarding what works for them in given situations and what they need to do to continue to progress. Through another synthesis of existing research on metacognition, Anderson (2002) concluded that a hallmark of metacognitively aware learners is that they evaluate whether their actions are effective and "know what to do when they don't know what to do" (p. 2).

Metacognition is often separated into three distinct types of knowledge, although the labels vary depending on the researcher. Schraw (1998) and White and Frederiksen (2005) identified the three types of metacognitive knowledge as declarative, procedural, and conditional. Pintrich (2002) and Flavell (1979) refer to them as strategic knowledge, knowledge about cognition, and self-knowledge. Regardless of the labeling, those five researchers all categorize metacognitive knowledge into the following groups: self-knowledge and understanding of strengths and weaknesses; knowledge of various strategies for learning, thinking, and solving problems; and knowledge that enables students to appropriately select strategies according to the task (Flavell, 1979; Pintrich, 2002; Schraw, 1998; White & Frederiksen, 2005).

Perkins and Grotzer (1997), Schraw (1998), Sperling, Ramsay, Richmond, and Klapp (2012), and Veenman, Kok, and Blote (2005) found that acquisition and integration of metacognitive strategies has a beneficial effect on academic achievement and learning. Perkins and Grotzer (1997) completed a review of existing studies and literature on the topic of teaching intelligence as measured by ability. In this review, the authors synthesized the varying theories of intelligence to identify three broad styles in theorizing about intelligence and thought processes: neural, experiential, and reflective. According to the authors, reflective intelligence refers to metacognitive understanding put into practice to achieve intelligent behavior and "most instructional efforts to enhance intelligence focus on reflective intelligence" (p. 1126). In concordance with this statement is a study by Adey and Shayer (1993) that used the Cognitive Acceleration Through Science Education (CASE) Program to teach pattern of thinking in science as well as metacognition and transfer of learning strategies. 194 students between the ages of 11 and 12 were formally evaluated in addition to a control group of 230 students. Adey and Shayer (1993) did not find significant results at the end of the intervention, however measurements a year later showed significant improvements for 12-year old boys and 11-year old girls from the CASE group on school science achievement tests. Additionally, significant differences existed two years later for 12-year old boys and 11-year old girls in science, math, and English between the CASE students and the control group on the General Certificate of Secondary Education Exam. Even though causality is lacking from this study, Perkins and Grotzer (1997) and Adey and Shayer (1993) suggest that the metacognitive and learning strategies that students learned through means of the CASE Program caused them to become more intelligent, as measured by academic achievement.

In a 2012 study on the relationships between components of metacognition from varying theoretical perspectives, Sperling et al. found that metacognition is a significant predictor in science achievement and overall academic achievement as determined by GPA. Sperling et al. (2012) determined levels of metacognition (low vs. high) of 97 seventh-grade students from a large suburban middle school using two measures of metacognition: the 18-item Junior Metacognitive Awareness Inventory (Jr. MAI) and an open-ended version of the Swanson Metacognitive Questionnaire (SMQ). Reliability for the Jr. MAI resulted in an upper confidence of .91 for the full scale and upwards of .69 for the SMQ. The data set was completed with teachers' rating of students' metacognition, students' GPA in science, and their overall GPA. Based on the results of the project's data, Sperling et al. (2012) found that when both measures of the Jr. MAI and the SMQ were entered into regression models, that both were significant predictors of science GPA and overall academic GPA, although Sperling et al. (2012) found the SMQ to be a more accurate predicting variable of both GPA measurements. The authors of this study concluded metacognition to be a significant predictor of science and academic achievement as measured by GPA.

In 2005, Veenman et al. aimed to establish to what extent metacognitive skill is associated with intelligence as measured by ability and investigate the impact of providing hints or support during the execution of metacognitive skills. The authors administered a standardized intelligence test to a group of first-year secondary students, who then solved six math word problems. Three of the problems were completed without metacognitive hints and three were completed with hints provided. The authors assessed the students' metacognitive skillfulness through systematic observation. At the end of the study, Veenman et al. found that the

participants' academic success, as measured by GPA, was predicted by combination of both intellectual and metacognitive skills.

Metacognitive knowledge and appropriate implementation of metacognitive strategies can help make up for academic and knowledge deficiencies (Pintrich, 2002; Schraw, 1998). This may be especially important for students who have not experienced high levels of academic success or who lack background knowledge that teachers assume they have at their age or grade level. According to Costa and Kallick (2008), changing views of intelligence as measured by ability have been "one of the most powerful, liberating forces ever to influence the restructuring of education, schools, and society" (p. 5) and play an important role in the development self-regulatory and metacognitive habits. Traditionally, intelligence has been viewed as a quality of mind and brain, but intelligent functioning also depends on physical, social, and symbolic support systems (Salomon, 1993). Physical support systems include effective learning strategies and tools; social supports refer to teachers, facilitators, classmates, and parents that foster intelligent reflection; and symbolic resources refer to a common language that revolves around thinking and metacognition. Metacognition is a skill and a habit, both of which can be taught, practiced, and employed, therefore any individual who can perform a skill has the capacity for development of metacognition (Schraw, 1998).

Anderson (2002), Costa and Kallick (2008), Pintrich (2002), Ritchart, Church, and Morrison (2011), and Schraw (1998) argue that metacognition is teachable and that it must be taught explicitly. These researchers claim that through discussion, modeling, and explicit instruction that describes how and when to use learning strategies, students may adopt metacognitive strategies and discover that they have control over their mental processes and the academic success they experience. It should be noted that although not every student who

receives explicit instruction and modeling of metacognitive routines and strategies will adopt and take ownership of them, those who are aware of the strategies and know how to use them are more likely to reap the benefits of metacognitive practices (Costa & Kallick, 2008).

Research on Measuring Attitudes

Consideration of students' attitudes towards school as a whole, towards school subjects, and towards learning experiences is worthy because attitudes are often directly correlated to success and achievement (Haladyna, Shaughnessy, & Shaughnessy, 1983). Students who conceive of school and learning with positivity are more likely to pursue, take advantage of, and enjoy opportunities to learn and grow intellectually. With regard to academic achievement, it is imperative that students maintain positive attitudes towards school and learning because positive attitudes and learning are closely correlated with one another (Haladyna et al., 1983). Students who lack positive attitudes towards school are less likely to learn and attain high levels of academic achievement than students with positive attitudes. Attitude can be defined as a general emotional predisposition toward a referent that dictates how an individual tends to behave toward or respond to that referent (Alwin, 1992; Corey, 1943; Haladyna et al., 1983). As individuals become increasingly aware of their attitudes and dispositions towards certain items, they gain greater ability to control their attitudes and make changes to their behaviors that reflect those attitudes.

Corey (1943) included questions to determine the degree to which questions on an attitudinal survey corresponded with the information that the researcher was intending to collect. Corey cited the knowledge of whether or not change has occurred as one of the frustrations of teachers in assessing students' attitudes. The author provided a suggestion for obtaining, by use of self-assessment, a measure of students', elementary-level and older, attitudes toward any

practice, object, or institution. The procedure outlined by Corey consists of the following steps: collection of attitudinal statements, selection of statements, and, finally, administration of the questionnaire, scoring of the questionnaire. Corey suggested Wang's (1932) criteria for selection of attitudinal statements, which state that statements should: be debatable, not be easily interpreted in multiple ways, be simple enough in that they do not include multiple statements that one could both agree and disagree with simultaneously, be short, and not include technical terms. When the questionnaire is administered, students should be encouraged not to discuss the questions and to answer as truthfully as possible. When scoring the questionnaires, Corey recommended that the researcher scores and assigns point values in a way that results in a high score representing a favorable attitude. The researcher should differentiate between statements that are in favor of the practice, object, or institution and those that are against it. These statements would be scored differently from one another. Corey recommended using a 5-point scale so that there can be an adequate range of positive and negative attitudes expressed as well as an option to express neutrality. When using a 5-point scale, statements representing a favorable attitude on which the student strongly agreed would earn 5 points. A student strongly disagreeing with such a statement would earn one point. The scoring would reverse for statements that represented an unfavorable attitude, in that strongly agreeing with an unfavorable attitude would earn one point. Corey expressed a preference for this type of calculation allows for the researcher to not only track changes in attitudes but to determine the overall attitude (positive, negative, neutral) of the student toward the practice, object, or institution.

Dutton (1954) conducted a study intending to report the attitudes of college students toward mathematics, as measured by a reportedly objective evaluation instrument. Dutton followed the procedure outline by Corey (1943) and the requirements for appropriate

questionnaire items written by Wang (as cited in Corey, 1943). The author selected 22 statements to include in the questionnaire, which he shuffled and selected randomly for placement on the questionnaire. Dutton used the scale value to determine the direction and intensity of 289 students' attitudes toward each statement about mathematics. Dutton found significant results that reported on students' attitudes toward mathematics, including attitudes toward specific components of mathematical study (e.g. word problems, fractions, level of understanding). Through this study, Dutton concluded that the technique he used to measure attitudes can be successfully applied to multiple subjects, that direction and intensity of attitudes toward mathematics can be measured objectively, that significant data can be collected based on the results of this instrument.

Alwin (1992), Corey (1943), Dutton (1954), Dwyer (1993), and Haladyna et al.'s (1983) research on measurement of student attitudes demonstrates that the direction and intensity of student attitudes can be measured with satisfactory reliability. Corey (1943) provides detailed explanations of his process and recommendations for creating an instrument to measure attitudes. Alwin (1992) found, through a review of existing research, that the reliability of self-report attitude measurement tools increases as questions have more response categories. In a separate review of the research, Dwyer (1993) analyzed and evaluated various self-report methods for measuring student attitudes and found that Likert scales were more efficient and effective than the Thurston technique, Guttman scale, and semantic differential scale, all of which are commonly-used methods for measuring attitudes.

Attitudes toward Achievement

In considering the goals of metacognition and progress-monitoring, it is important to recognize the attitudes and perceptions that students have regarding how they view academic

success, which is usually dependent upon the letter grade or percentage they receive in a course. While summative scores should be indicative of the degree to which a student meets the intended learning-goals, students also believe that other factors outside of their performance should influence their summative scores or evaluations. The main factors concerning students' perceptions of grade calculation and the grading process are: weight of effort (how much time the student spent doing work for the class) versus performance; instructor grading fairness and competence; and students' academic dispositions. Overall, research has found that students expect a larger portion of their final grade to be based on effort than do their instructors (Adams, 2005; Zinn, Magnotti, Marchuk, Schultz, Luther & Varfolomeeva, 2011; Tippin, Lafreniere & Page, 2012; Gaultney & Cann, 2001). Students also believe that effort should account for different point values depending on the purpose or requirement of the course (Adams, 2005; Zinn et al., 2011). The results of research done by Adams (2005) and Zinn et al. (2011) demonstrate that the more relevant a course appears to be to a student's future practice or profession, the less they think that effort should factor into their grade (Adams, 2005; Zinn et al., 2011).

The inclusion of effort into a course grade appears to be problematic in practical application because, as even students reported, effort is difficult to measure accurately (Zinn et al., 2011) and course instructors are not very adept at measuring effort (Zinn et al., 2011; Gaultney & Cann, 2001). There are also certain personality traits and academic tendencies that lead students to be either more grade or performance oriented or learning and mastery oriented (Tippin et al., 2012; Gaultney & Cann, 2001). These traits appear related to student perceptions regarding grading practices in regards to the weight they believe pure effort, completely separate from any mastery of the content should hold in the composition of a grade. Students who are

grade or performance oriented are primarily concerned with earning high grades and typically believe that more time and effort put toward a course should increase their grade, regardless of assessment scores. Learning and mastery oriented students are less concerned with letter grades and are motivated by their desire to learn and master content and skills. According to Paris and Newman (1990), students' self-efficacy is closely related to students' beliefs regarding the importance and weight of effort. Accordingly, self-efficacious students, who often have strong self-regulatory and metacognitive skills, place low value on effort as a grading criterion because they believe in their capability to monitor their progress and make necessary adjustments to meet the intended learning-goals.

Beliefs about Intelligence and Ability

Blackwell, Trzesniewski, and Dweck (2007) conducted a study intended to examine the relationship between ability beliefs and long-term achievement trajectories. This study was conducted over the course of five years using 373 junior high students as participants. The researchers measured and tracked the implicit theories and other achievement-related beliefs of four waves of junior high school students, beginning at the very start of their seventh grade school year and ending at the conclusion of eighth grade. Participants completed a questionnaire designed to assess ability beliefs, goals, effort beliefs, and orientation responses toward failure. Blackwell et al. (2007) refer to two theories of intelligence as determined by ability: entity theory and incremental theory. The authors define entity theory as the belief that intelligence is fixed and unmalleable, regardless of outside influences or interventions. They describe incremental theory as the view of intelligence as a quality that can grow and develop. At the end of the fall and spring terms of each year, Blackwell et al. (2007) collected mathematics grades for all participants. The researchers tested an integrated causal model of the processes connecting the

students' beliefs related to achievement to academic strategies and actual grades earned over the course of the two-year junior high period of each student. Blackwell et al. (2007) found an incremental theory of intelligence to be positively related to positive effort beliefs, learning goals, low helpless responses when faced with failure, and positive learning strategies, all of which were positively related and interconnected. The researchers used the data collected to determine that an incremental belief about ability and intelligence was a significant factor in prediction of higher mathematics grades than students who maintained an entity belief.

Heyman and Dweck (1998) conducted a study aiming to establish children's beliefs regarding the ability (entity vs. incremental) and personality traits. Eighty-six seven- and eight-year old second graders responded to a series of hypothetical situations in one-on-one interviews at their schools. The authors wanted to optimize the students' identification with the characters in each scenario, so the gender of the student in the scenario was adjusted to match the gender of the student who responded to the interview questions. Students were divided into two groups, dependent upon their response to a single questions intended to assess their beliefs regarding ability and behavior as either entity (unchanging) or incremental (flexible). The interview questions were designed to allow for measurement of the students' beliefs and attitudes regarding interpretation of academic outcomes, including performance attribution, learning strategies, and teacher reactions to mistakes. The students' teachers rated the overall academic ability of each of the students who participated in the study on a ten-point scale so that Heyman and Dweck (1998) could examine the potential relationship between academic ability and beliefs about ability. Two independent coders coded the students' responses to the open-ended interview items. The coders awarded 1 point for each response involving a metacognitive suggestion or question or an offer of help. Responses that did not provide relevant solutions or that were

simply evaluative (involving praise or sympathy) did not warrant any points. Students' response had the potential of ranging from 1 to 5. The researchers found that students with an entity belief toward ability attributed outcomes to the traits of a person and were more focused on evaluative feedback than students with an incremental belief toward ability. Students with an incremental ability belief attributed outcomes to learning processes, such as practicing, learning from mistakes, asking for help, and study habits, with more frequency than students with entity beliefs. Heyman and Dweck (1998) found significant difference between the entity and incremental groups in regard to explanations of a student's success. Findings showed that 53.8% of students with entity beliefs attributed students' success to their inherent ability, as opposed to 23.3% of students with incremental beliefs. Almost all participants attributed students' failure to a lack of learning processes. They found that 15.4% of students with entity beliefs reported that a teacher would be unhappy if they attempted a challenge and made considerable mistakes, as opposed to 3.3% of students with incremental beliefs. The authors suggest that this data demonstrates that those with entity beliefs are more likely to emphasize the evaluative measures of academic outcomes than those with incremental beliefs. Heyman and Dweck (1998) analyzed the teachers' ratings of their students' academic ability and did not find any significant relationship between ability beliefs and actual ability.

Synthesis

Student attitudes towards school subjects can be measured with satisfactory reliability using self-report methods such as a Likert scale and they should be measured and monitored because attitudes are important factors that affect motivation and academic success (Alwin, 1992; Corey, 1943; Dutton, 1954; Dwyer, 1993; Haladyna et al., 1983). Metacognition and self-regulated learning can be learned and should be taught explicitly so that students can reap the

benefits, such as increased perceived control over academic success, enhanced positive attitudes towards school, higher levels of motivation, and greater time and effort put forth towards learning and academics (Haladyna et al., 1983; Perkins & Grotzer, 1997; Schraw, 1998; Sperling et al., 2012; Veenman et al., 2005). The cycle of academic success and authentic learning involves many factors: attitudes towards school and learning, concepts of ability, goal-setting, progress-monitoring, employment of metacognitive strategies of product and process, and perceptions of effort and self-efficacy, to name a few. All of these factors are intertwined and affect one another in the learning process. It warrants further investigation to see if the implementation of metacognitive strategies and routines and self-regulative learning habits can positively change students' attitudes and perceptions of self-efficacy, ability, and daily learning targets.

Chapter Three

Methods

The purpose of this action research project is to address if and how the integration of metacognitive routines and habits into my Spanish III courses affects students' perceptions of and attitudes towards self-efficacy with the Spanish language, their concepts of intelligence as measured by ability (elastic vs. static), and the process of using daily learning targets to self-monitor. Implementation of this project took place throughout first semester of the 2014-2015 school year, from September 3, 2014 through January 20, 2015.

Context

The project took place in a high school in a suburban-rural village in the Midwest. The village population is roughly 7,500. The high school has approximately 1,500 students. The student population is 91% White, 4% Hispanic, 1% Asian, and the remaining students are of other races or ethnicities.

Participants

Participants consisted of the students in my three sections of Spanish Level III at the high school during the first semester of the 2014-2015 school year. Participants were within the ages of 15-18 years and consisted of both males and females. In this study, 22 participants were male and 32 were female; 96% of participants were White, 2% were Hispanic, and 2% were Asian. This group was chosen for the project because this was the largest population to which I had access to and could control daily classroom activities, including the ability to take measurements for this project.

Questions

The project revolved around answering the following principal question: How does the implementation of metacognitive strategies and routines change students' attitudes towards (a) their concept of intelligence as measured by ability; (b) the process of using daily learning targets to self-monitor; and (c) perceived self-efficacy in Spanish class? In attempting to answer these questions, all participants completed two Likert scale questionnaires, the first serving as the baseline for data collection.

Instruments for Data Collection

The baseline and final questionnaire used 5-item Likert scales to measure perceptions of self-efficacy in Spanish; attitudes towards the process of using daily learning targets to self-monitor; and concept of intelligence as measured by ability (see Appendix B). The response items for the questionnaire were as follows: strongly disagree; disagree; neutral; agree; and strongly agree. Statements were separated into three different categories in attempt to measure participants' attitudes towards or perceptions of (a.) self-efficacy in Spanish; (b.) the process of using daily learning targets to self-monitor; and (c.) ability beliefs. Each question was labeled as either positively or negatively associated with the targeted attitude item. Positive associations rendered high point values (i.e. 5 points = most positive attitude, 1 point = most negative attitude). This instrument was created due to a lack of an existing tool to measure the three areas of focus. The same questionnaire was administered at the beginning of the semester and at the end of the semester. Completion of each questionnaire took approximately ten minutes. Questionnaire items were initially drafted with the three categories (self-efficacy in Spanish; ability beliefs; and learning targets) in mind.

Procedures

The questionnaire items intended to measure attitudes toward self-efficacy in Spanish were modeled off of questions constructed by Haladyna et al. (1983, pp. 23) that intended to assess academic self-concept (e.g. "I think that I am a successful student") and fatalism (e.g. "I'm not the type to do well in math"). Items used to assess students' ability beliefs were influenced by Dweck's (1986) and Dweck and Leggett's (1988) work describing the characteristics of students with flexible and with entity beliefs regarding ability (as cited in Schunk, 1990). More specific phrasing for the questions representing attitudes toward intelligence and ability beliefs (e.g. "You have a certain amount of intelligence, and you really can't do much to change it") was taken from Blackwell, Trzesniewski, and Dweck's (2007) study of implicit theories of intelligence and academic achievement. Questionnaire items used to measure students' attitudes toward learning targets were created using Corey's (1943) criteria for quality survey items. Validity and quality of questions were evaluated based on the work of Corey (1943) on quality of questions and Dutton (1954) on construction of attitudinal scale questions, which were discussed earlier.

My decision to use a 5-point Likert-type scale as my instrument of measurement was based on studies by Dwyer (1993), who found Likert to be the most efficient and effective means of measuring self-reported attitudes, and Alwin (1992), who found that more measurement categories on a scale will translate to greater reliability.

Written permission to conduct the study was obtained from district administration and from participants' parents/guardians. Data were eliminated for the 14 students who only completed one of questionnaires. Once I received my finalized class roster for the semester, I assigned numbers to participants to maintain their anonymity throughout the project. In order to check for comprehension and clear interpretation of the items on the questionnaire, I tested the

questionnaire with a few students external to the study. Based on the results of the questionnaire trial and the feedback from the trial students, I revised the questionnaire to improve clarity. Once the questionnaire was revised, participants completed the Likert scale questionnaire, which I used as the baseline for data analysis. I analyzed questionnaire results and assigned each participant a numerical score that will represents measured attitudes towards self-efficacy in Spanish, daily learning targets, and concepts of intelligence as measured by ability.

To begin implementation of metacognitive self-monitoring using daily learning targets, I explicitly provided instruction on metacognitive routines and specific questions that participants could ask themselves to self-assess their current ability levels and understandings as part of the introduction to the course and course expectations. Throughout the course of the semester, I posted daily learning targets that stemmed from the chapter and Spanish Level 3 course objectives (see Appendix E). Learning targets are written in the form of an "I can…" statement that indicates what students should aim to be able to do or work toward in order to demonstrate proficiency for the chapter. Throughout each lesson, I referred to the daily learning target(s) in order to remind students' of the goal and to explicitly connect the class activities to the target. At the end of each class period, students would complete a brief reflection, using our four-point departmental self-assessment scale, on which students would write down the number that best represents their current ability to meet the day's learning target(s). On a regular, but not timed, basis, students would complete oral or written reflections in which they would cite specific evidence from the class period that would indicate to them that they were at the indicated level of ability in relation to the learning target. On these reflections, students would also set goals for themselves as to when they would plan to meet the target and what specific steps they would take to get closer to meeting or exceeding the target.

In the final week of the semester, I administered the final Likert scale questionnaires. Participant responses on the final Likert scale questionnaires were analyzed and compared with the results of the baseline questionnaires.

Table 3.1

Table of the Timeline for Action Research Project

Dates	Description
Sept. 1	Trialed items on the questionnaire with a few students external to the study to check for comprehension and interpretation
Sept. 1	Analyzed trial feedback and revise questionnaire to improve clarity
Sept. 1	Prepared questionnaires
Sept. 3	Assigned numbers to participants to maintain their anonymity throughout the project
Sept. 3	Participants completde the Likert scale questionnaire to be used as the baseline for data collection
Sept. 4-Oct. 3	Participants completed daily self-evaluation for Chapter PE1 Learning Targets
Sept. 6	Analyzed questionnaire results
Oct. 6-Oct. 31	Participants completed daily self-evaluation for Chapter PE2 Learning Targets
Nov. 3-Dec. 5	Participants completed daily self-evaluation for Chapter 1A Learning Targets
Dec. 8-Dec. 23	Participants completed daily self-evaluation for Chapter 1B Learning Targets
Jan. 5-Jan. 20	Participants completed daily self-evaluation for Chapter 2 Learning Targets
Jan. 20	Administered final Likert scale questionnaires
Apr. 8	Analyzed final Likert scale questionnaires
Apr. 9	Compared and analyzed baseline and final questionnaires

Analysis

The questionnaires were administered during class with completion of the questionnaire taking approximately 10 minutes. The first questionnaire, which intended to establish a baseline for the attitudes of perceptions of the participants took place during the first week of school of the semester. The second questionnaire, which was utilized to identify and quantify changes in attitudes and perceptions, was administered during the final week of the semester.

Statements included on the Likert Scale are below. Each statement is labeled as representing either a positive (+) or negative (-) association with the category's value (see Table 3.2). Participants indicated their level of agreement with each statement by selecting on of the following options: strongly disagree; disagree; neutral; agree; and strongly agree. Positive associations rendered high point values (i.e. 5 points = most positive attitude, 1 point = most negative attitude). The same questionnaire was administered at the beginning of the school year as at the end of the semester.

In analyzing the data, I first went through each questionnaire and highlighted the statements that represented negative associations with the category. After differentiating the positively associated statements from the negatively associated ones, I wrote down the point value to be assigned to each of the statements associated with a negative attitude toward the category. I implemented the method of analysis used by Dutton (1954) and Corey (1943) to assign a low point value (1 or 2, respectively) to negatively associated statements in which students strongly agreed or agreed. Once I had all of the true point values recorded on each questionnaire, I calculated the total point value for each category. With six questions for each category and a maximum point value of 5 and a minimum of 1 for each questions, a point value

of 30 for a category signifies the most positive attitude possible toward; a 6 reflects the most negative attitude possible, using the scale; and a value of 18 represents a neutral or indifferent attitude toward the given category. I recorded category scores for each participant into a spreadsheet and calculated the overall attitudes of my students, as measured by the average category score of all participants. I also calculated the overall change in attitude for each participant based on scores from the initial questionnaire to the final and the overall change amongst all participants. A positive number in change represents a change toward a more positive attitude and a negative number represents a shift toward a more negative attitude.

Table 3.2

Table of Positive or Negative Attitude Association for Questionnaire Items

Self-Efficacy
1. I am a successful Spanish student. (+)
2. I have the potential to be successful in Spanish class. (+)
3. I am not the type to do well in Spanish. (-)
4. I do not like Spanish class. (-)
5. When I don't know how to express something in Spanish, I don't really know what steps to take. (-)
6. I can figure out many problems I encounter with Spanish if I invest the necessary effort. (+)
Intelligence and Ability
7. Intelligence can grow and increase with effort. (+)
8. People who are unintelligent can't help it. (-)
9. Almost everyone has the ability to learn. (+)
10. There are steps I can take to become more intelligent. (+)
11. People who don't do well in school can't do anything to change that. (-)

12. People have little control over their own intelligence. (-)

Learning Targets

13. I use daily learning targets to monitor my understanding in Spanish class. (+)

14. Being aware of how well I understand something can help me better understand it. (+)

15. I don't know how use to daily learning targets effectively. (-)

16. Daily learning targets are pointless. (-)

17. Daily learning targets can be very useful, if you know how to make them work for you. (+)

18. I really don't think that learning targets can help me be a better student. (-)

Chapter Four

Discussion of Results

The data presented in this chapter examines the results of the initial and final questionnaires measuring participants' self-efficacy, concept of ability, and attitudes toward learning targets. Results from the questionnaires are presented and the data is then analyzed in order to help determine the relationship between the incorporation of daily and chapter learning targets used as a metacognition tool, participants' attitudes toward the measured items, and student's grades for semester.

Students' attitudes and changes in attitudes were measured and monitored via a questionnaire using a 5-response item Likert scale. Appendix C includes the raw scores of the initial and final questionnaires and averages of scores in each measured item. Results are reported as differences in individual and overall raw scores between the initial questionnaire and the final questionnaire in Appendix D.

My hypothesis was that the integration of the metacognitive practice of using daily learning targets to self-assess progress and ability into my high school Spanish III classroom would increase students' perceptions of self-efficacy in Spanish language learning, their concepts of intelligence as measured by ability, and their attitudes towards the process of using learning targets. This hypothesis was incorrect in examination of overall change amongst participants, although my hypothesis was correct in the case of individual students in varying categories. There was no large change over all participants' perceptions of self-efficacy in Spanish, concept of intelligence as measured by ability, or attitudes towards daily learning targets over the course of the semester as indicated by the data.

Table 4.1

Mean Average of Attitudes

Questionnaire	Self-Efficacy in Spanish	Intelligence & Ability	Learning Targets
Initial	24.94	27.07	20.63
Final	24.30	26.87	20.35

Table 4.2

Median Average of Attitudes

Questionnaire	Self-Efficacy in Spanish	Intelligence & Ability	Learning Targets
Initial	25	27	21
Final	25	27	20.5

Perceptions of Self-Efficacy in Spanish

Six of the questionnaire items measured participants' perceptions of self-efficacy in Spanish class. The highest possible score for these items was a 30, which represents the highest, most positive perception of self-efficacy in Spanish. A score of 6 was the lowest possible score, which represents the lowest, most negative perception of self-efficacy in Spanish. As Table 4.1 demonstrates, the mean score of all participants was 24.94 on the initial questionnaire and 24.30 on the final questionnaire. Table 4.2 shows the median averages for the initial and final questionnaire to both be 25. Examination of the initial and final questionnaires shows that 21 of the 54 participants exhibited an increases percept of self-efficacy in Spanish, five participants exhibited no change, and 28 exhibited a negative change.

Intelligence and Ability Beliefs

Six of the items measured participants' concepts of intelligence as measured by ability. Out of all 54 participants, 19 exhibited a positive change, 11 exhibited no change, and 24 exhibited a negative change over the semester in regards to concept of intelligence. The mean score on the initial questionnaire is 27.07 and the final questionnaire's mean score is 26.87. The median scores for the initial and final questionnaires were both 27.

Attitudes towards Daily and Chapter Learning Targets

Six of the questionnaire items measured participants' attitudes towards daily and chapter learning targets. 18 of the participants showed positive change, 10 participants showed no change, and 26 showed negative change in attitudes towards daily and chapter learning targets as measured by the questionnaires. The initial questionnaire shows that the mean average score for all participants was 20.63 and that the mean average score for all participants on the final questionnaire was 20.35. The median score for the initial questionnaire was 21 and the final questionnaire was 20.5.

Attitudes in Comparison with Semester Grades

Students who earned a letter grade of *A* for the semester did not demonstrate large change in attitudes toward the three measured items over the course of the semester. Table 4.3 demonstrates the mean average attitudinal scores for these students. Students who earned an *A* for the semester had the highest self-reported attitudes toward self-efficacy in Spanish.

Table 4.3

Mean Average Attitude Scores of Students with Semester Grade of A

Questionnaire	Self-Efficacy in Spanish	Intelligence & Ability	Learning Targets
Initial	26.43	27.10	20.33
Final	26.00	27.10	20.67

The mean average attitudinal scores for students who earned a letter grade of *B* for the semester are shown in Table 4.4. This group of students held the least positive attitudes toward concept of intelligence determined by ability as measured by the attitudinal scores collected from the questionnaires. On measures of self-efficacy in Spanish, students who earned a *B* for the semester had less positive attitudes than students earning an *A* and more positive attitudes than students earning a grade of *C* or *D.*

Table 4.4

Mean Average Attitude Scores of Students with Semester Grade of B

Questionnaire	Self-Efficacy in Spanish	Intelligence & Ability	Learning Targets
Initial	24.71	26.71	20.43
Final	24.14	26.38	20.24

Table 4.5 shows the mean average attitude scores of students who earned a letter grade of *C* for the semester. Based on the data of the initial questionnaire, this group of student participants demonstrated the most positive attitude toward concept of ability. Based on data of the final questionnaire, these students demonstrated the second most positive attitude toward concept of intelligence after students earning a *D* for the semester.

Table 4.5

Mean Average Attitude Scores of Students with Semester Grade of C

Questionnaire	Self-Efficacy in Spanish	Intelligence & Ability	Learning Targets
Initial	23.00	27.71	22.00
Final	22.71	27.29	21.71

The data in Table 4.6 shows that the students who earned a semester grade of *D* had the least positive sense of self-efficacy in Spanish as measured by both the initial and the final questionnaire. As measured by the final questionnaire, these students held the most positive perceptions of concept of intelligence based on ability in comparison with students earning grades of *A*, *B*, or, *C* for the semester. These students held the least positive attitudes toward learning targets throughout the semester, as demonstrated by data from the initial and final questionnaires. There were no students who earned a letter grade of *F*.

Table 4.6

Mean Average Attitude Scores of Students with Semester Grade of D

Questionnaire	Self-Efficacy in Spanish	Intelligence & Ability	Learning Targets
Initial	22.40	27.60	20.80
Final	20.00	27.40	17.60

Chapter Five

Conclusions and Recommendations

The results I received from this study do not indicate that daily incorporation of learning targets and self-monitoring produces a large change, either positive or negative, overall for my students in terms of their perception of self-concept in Spanish, ability beliefs, or attitudes towards daily learning targets.

It is interesting to note that according to the questionnaire results, on average students had positive attitudes to begin with towards all three categories. This may suggest that there was not much room for growth in the data as there would have been if the data showed that students had negative attitudes toward the measured items. I would recommend that future studies of this type incorporate a wider scores range in the measurement instrument so as to avoid the ceiling effect that I experienced in this project. In the last few years at my school, there has been a push to engage students in metacognitive practices and to provide more frequent opportunities to allow them to thinking about their thinking. I suggest that this may be a possible cause for the positive attitudes that students' demonstrated on the questionnaire. This would support Schunk's (1990) findings that as students monitor their learning and put forth greater effort to incorporate and make adjustments to learning strategies that they are likely to develop positive attitudes toward school or specific school subjects.

In examination of students' attitudinal scores when grouped by academic achievement, as measured by semester grade, the only negative group attitudinal score was on the final questionnaire, directed toward the process of using learning targets to self-monitor by students earning a *D* for the semester. The attitudinal score for this item was 17.60, so it is just on the negative side of a completely neutral average response. The fact that, on average, students who

earned a *D* for the semester had more negative attitude associations toward learning targets may suggest that they did not see the value or necessity of monitoring their progress using the targets or that they did not have positive attitude associations toward monitoring their low academic achievement. Costa and Kallick (2008) and Schunk (1990) suggest that students who measure their progress toward achieving an academic goal and observe satisfactory progress experience positive associations between effort and ability and increased self-efficacy. If the reverse of that statements holds true, it may account for the fact that this group of students who earned a *D* for the semester also had the lowest measured perceptions of self-efficacy in Spanish.

The findings of this study demonstrate a positive correlation between high self-efficacy in Spanish and academic achievement, as determined by semester grade. Costa and Kallick's (2008), Newman's (1990), and Schunk's (1990) support this finding, as they found students' self-efficacy to be directly related to their beliefs regarding the importance and weight of effort, which, according to Blackwell et al. (2007) is a predictor of high academic achievement.

Based on the data, I found no direct relationship between ability beliefs and perceived self-efficacy in Spanish, attitudes toward learning targets, or academic achievement. Blackwell et al. (2007) found incremental ability beliefs to be a significant factor in prediction of higher grades than students who maintained an entity belief. My findings did not support this claim. I was also unable to establish a direct relationship between learning targets and perceived self-efficacy, ability beliefs, or academic achievement. In fact, there not did not appear to be a large difference in attitudes toward the process of using learning targets between student groups organized by semester grade.

It is a limitation of this study that the data is not highly generalizable, since I assessed only a select population, consisting of students in my Spanish Level 3 classroom over the course

of one semester. The results of this studied may vary with a different age group, content area, teacher, school, and range of time. Additionally, I had no control over the manner in which daily learning targets were used or not used in other classes, which may have affected students' perceptions of and attitudes towards said targets. All teachers in my school are required to post daily learning targets in their classrooms. Some teachers do not see value in this metacognitive practice or the potential for increased levels of achievement associated with self-regulatory practices such as this, so they may not use learning targets in a meaningful or useful way for students or may project negative attitudes toward the requirement posting of learning targets. These attitudes, whether explicitly stated or not, may in turn affect students' attitudes.

In support of Alwin (1992), Corey (1943), Dutton (1954), Dwyer (1993), and Haladyna et al.'s (1983) research on measurement of student attitudes, I also found it possible to measure the direction and intensity of student attitudes with satisfactory reliability. Haladyna et al. (1983) discussed the importance of discovering students' attitudes toward school as a whole, toward school subjects, and toward learning experiences, since attitudes are so often directly related to success and academic achievement. I found this study to be very worthwhile to me as an educator and the results to be very enlightening. The questionnaire allowed me to discover my students' attitudes toward the three measured items in a way that I did not expect. Based on comments that students make during class, I did not expect that they would, overall, have positive attitude associations toward learning targets, self-efficacy, or incremental ability beliefs.

I intend to share the results of this project with my administrators and departmental colleagues. My principal is especially interested in metacognitive practices and the posting of learning targets in the classroom, so he will be interested to read the results of this study.

There are a variety of external factors, including course grade, work load, and perceived success in comparison to previous Spanish courses, that may have influenced student perceptions of self-concept in Spanish, ability beliefs, and attitudes toward learning targets. An investigation of student accuracy in self-assessment of learning targets and actual proficiency in meeting those targets would provide an interesting component to accompanying the data that I have collected. Another potentially interesting addition to this study would be a follow-up of the questionnaire results with interviews of the students, categorized by attitudinal orientation or academic achievement. A sample of possible interview items in included in Appendix F.

In conclusion, the results of this study indicate to me that students' attitudes towards and perceptions of intelligence as measured by ability, self-concept in Spanish, and learning targets are not greatly affected by the use of the daily and chapter learning targets and student self-assessment using these targets. I plan to continue posting daily learning targets, using chapter targets as a guide for student learning, and having students assess their ability to meet the daily and chapter targets as a method of self-monitoring and metacognition.

References

Adams, J. B. (2005). What makes the grade? Faculty and student perspectives. *Teaching of Psychology, 32*(21), 20-24. Retrieved from http://top.sagepub.com/content/32/1/21

Adey, P., & Shayer, M. (1993). An exploration of long-term far-transfer effects following an extended intervention program in the high school science curriculum. *Cognition and Instruction, 11*(1), 1-29.

Alwin, D. F. (1992). Information transmission in the survey interview: Number of response categories and the reliability of attitude measurement. *Sociological Methodology, 22*, 83-118. Retrieved from http://www.jstor.org/stable/270993

Anderson, N. J. (2002). The role of metacognition in second language teaching and learning. *ERIC Digest*. Retrieved from http://www.cal.org/resources/digest/0110anderson.html

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1988). Self-regulation of motivation and action through goal systems. In V. Hamilton, G. H. Bower, & N. H. Frijda (Eds.), *Cognitive perspectives on emotion and motivation* (pp. 37-61). Dordrecht, The Netherlands: Kluwer Academic Publishers.

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 79(1),* 246-263.

Bransford, J., Brown, A., & Cocking, R. (1999). *How people learn: Brain, mind, experience, and school.* Washing, DC: National Academy Press.

Corey, S. (1943). Measuring attitudes in the classroom. *The Elementary School Journal, 43*(8), 457-461. Retrieved from http://www.jstor.org/stable/997556

Costa, A. L. & Kallick, B. (Eds.). (2008). *Learning and leading with habits of mind: 16 essential characteristics for success*. Alexandria, VA: ASCD.

Donovan, S. M., Bransford, J. D., & National Research Council (U.S.). (2005). *How students learn: Science in the classroom*. Washington, D.C.: National Academies Press. Retrieved from http://www.nap.edu/catalog/11102.html

Dutton, W. H. (1954). Measuring attitudes toward arithmetic. *The Elementary School Journal, 55*(1), 24-31. Retrieved from http://www.jstor.org/stable/999044

Dwyer, E.E. (1993). Attitude scale construction: A review of the literature. Morristown, TN; Walters State Community College (ERIC Document Reproduction Service No. ED 359201)

Everson, H. T., Tobias, S., & Laitusis, V. (1997, March). Do metacognitive skills and learning strategies transfer across domains? Paper presented at the Annual Meeting of the American Educational Research Association: Chicago. New York, NY: College Entrance Examination Board.

Flavell, J. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist, 43*, 906-911.

Gaultney, J. F., & Cann, A. (2001). Grade expectations. *Teaching of Psychology, 28*(2), 84-87. Retrieved from http://top.sagepub.com/content/28/2/84

Haladyna, T., Shaughnessy, J., & Shaughnessy, J. M. (1983, January). A causal analysis of attitude toward mathematics. *Journal for Research in Mathematics Education, 14*(1), 19-29. Retrieved from http://www.jstor.org/stable/748794

Heyman, G.D., & Dweck, C.S. (1998) Children's thinking about traits: implications for judgments of the self and others. *Child Development (69)*2, 391-403. Retrieved from

http://www.jstor.org/stable/1132173

McCombs, B. L., & Marzano, R. J. (1990). Putting the self in self-regulated learning: The self as agent in integrating will and skill. *Educational Psychologist, 25*(1), 51-69. doi:10.1207/s15326985ep2501_5

Paris, S., & Newman, R. S. (1990). Developmental aspects of self-regulated learning. *Educational Psychologist*, *25*(1), 87-102. doi:10.1207/s15326985ep2501_7

Perkins, D. N., & Grotzer, T. A. (1997). Teaching intelligence. *American Psychologist*, *52*(10), 1125-1133. doi:10.1037/0003-066X.52.10.1125

Pintrich, P. R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing: Revising Bloom's taxonomy. *Theory into Practice, 41*(4), 219-225. Retrieved from http://www.jstor.org/stable/1477406

Ritchhart, R., Church, M., & Morrison, K. (2011). *Making thinking visible*: *How to promote engagement, understanding, and independence for all learners*. San Francisco, CA: Jossey-Bass.

Salomon, G. (1993). No distribution without individuals' cognition: A dynamic interactional view. In G. Salomon (ed.), *Distributed Cognitions*, 111-138. New York: Cambridge University Press.

Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science, 26*, 113–125.

Schunk, D. H. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychologist*, *25*(1), 71-86. doi:10.1207/s15326985ep2501_6

Sperling, R. A., Ramsay, C. M., Richmond, A. S., & Klapp, M. (2012). The measurement and predictive ability of metacognition in middle school learners. *The Journal of Educational*

Research, 105, 1-7. doi:10.1080/00220671.2010.514690

Tippin, C. K., Lafreniere, K. D., & Page, S. (2012). Student perception of academic grading: Personality, academic orientation, and effort. *Active Learning in Higher Education, 13*(1), 51-61. Retrieved from http://alh.sagepub.com/content/13/1/51

Veenman, M. V. J., Kok, R., & Blote, A. W. (2005, May). The relation between intellectual and meta-cognitive skills in early adolescence. *Instructional Science, 33*(3), 193-211. doi:10.1007/s11251-004-2274-8

White, B., & Frederiksen, J. (2005). A theoretical framework and approach for fostering metacognitive development. *Educational Psychologist, 40*(4), 211–223.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist, 25*(1), 3-17. doi:10.1207/s15326985ep2501_2

Zimmerman, B. J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal (31)*4, 845-862. Retrieved from http://www.jstor.org/stable/1163397

Zinn, T. E., Magnotti, J. F., Marchuk, K., Schultz, B. S., Luther, A., & Varfolomeeva, V. (2011). Does effort still count?: More on what makes the grade. *Teaching of Psychology, 38*(1), 10-15. Retrieved from http://top.sagepub.com/content/38/1/10

Appendix A: Participant Permission Form

Dear Parent/Guardian,

I am Jaclyn Ford, your child's Spanish III teacher for the 2014-2015 school year. I am sincerely looking forward to getting to know your child through this fun and challenging course. As we begin to move along with the year, I have a request of you.

I am currently in the process of completing my Masters in Science of Education at the University of Wisconsin-Whitewater. The culminating project for this program requires me to complete an action research project, in which I will be measuring changes in students' attitudes towards self-efficacy, perceptions of intelligence, and opinions regarding the daily learning targets posted in our classroom in relation to metacognitive strategies and routines. Through this program and project, I aim to improve my professional practice and share my insights with colleagues for the educational betterment of the students in the school district. Your child qualifies for participation in this research study because he/she is currently taking Spanish III with me. I will be administering two short (25 minutes each) questionnaires to students at the beginning and at the end of first semester to measure changes in attitudes and perceptions. Additionally, I hope to speak to students individually at the end of the semester in private interviews to gain further insight into their attitudes and perceptions and what enacted those changes for them.

Any information that is obtained through this study and that could be identified with your child will remain confidential. Your child's participation in this study is voluntary. Your decision whether or not to allow your child to participate in this study will in no way affect his/her relationship with myself. If you decide to allow your child to participate, you and/or your child may withdraw consent at any point in time.

If you have any questions or concerns, please feel free to contact me via email or phone. Thank you so much for your time and support!

Your signature below indicates that you have read and understand the information provided above. Please indicate as well whether or not you willingly agree to allow your child to participate. You may discontinue participation at any time. ***Please return form at your earliest convenience.***

___ I agree to allow my child to participate . ___ I do not agree to allow my child to participate.

_____ _____

Parent/Guardian Signature Date

_____

Child's Name

Appendix B: Questionnaire

Participant Identification Number: _____

Questionnaire

Indicate your level of agreement with each statement by writing the number that best represents your feelings and/or beliefs.

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

1._____ I am a successful Spanish student.

2._____ I have the potential to be successful in Spanish class.

3._____ I am not the type to do well in Spanish.

4._____ I do not like Spanish class.

5._____ When I don't know how to express something in Spanish, I don't really know what steps to take.

6._____ I can figure out many problems I encounter with Spanish if I invest the necessary effort.

7._____ Intelligence can grow and increase with effort.

8._____ People who are unintelligent can't help it.

9._____ Almost everyone has the ability to learn.

10._____ There are steps I can take to become more intelligent.

11._____ People who don't do well in school can't do anything to change that.

12._____ People have little control over their own intelligence.

13._____ I use daily learning targets to monitor my understanding in Spanish class.

14._____ Being aware of how well I understand something can help me better understand it.

15._____ I don't know how to use to daily learning targets effectively.

16._____ Daily learning targets are pointless.

17._____ Daily learning targets can be very useful, if you know how to make them work for you.

18._____ I really don't think that learning targets can help me be a better student.

Appendix C: Questionnaire Response Results: Semester Grades and Attitude Scores

Participant	Semester Letter Grade	Self-Efficacy in Spanish (Initial)	Concept of Intelligence (Initial)	Learning Targets (Initial)	Self-Efficacy in Spanish (Final)	Concept of Intelligence (Final)	Learning Targets (Final)
1	A-	29	27	16	27	27	16
2	B+	27	29	25	26	28	25
3	B+	24	26	19	22	28	23
4	A-	27	26	23	26	30	23
5	C	20	27	22	19	26	22
6	A	26	30	18	25	30	20
7	B	25	25	25	27	28	28
8	A	25	29	19	30	30	18
9	A	25	25	14	21	26	18
10	B	24	29	21	27	28	19
11	B	23	29	20	23	29	20
12	B	26	26	17	26	26	20
13	A	26	26	19	25	26	22
14	D+	29	30	25	13	27	13
15	A-	24	23	19	25	22	18
16	C+	25	30	23	26	30	28
17	B+	24	24	21	22	25	17
18	A-	26	28	19	28	25	21
19	C	25	30	25	26	28	22
20	A	28	28	26	27	28	19
21	B+	24	26	21	25	28	26
22	B+	26	27	21	22	24	21
23	C+	26	28	19	24	26	13
24	A	29	30	27	24	30	25
25	D+	16	24	19	19	27	17
26	B+	23	25	17	19	20	17
27	B+	24	29	21	26	26	20
28	A	29	28	14	27	26	21
29	B+	30	27	19	26	28	21
30	B+	25	24	22	25	28	22
31	A-	25	24	20	27	23	20
32	A-	30	30	20	27	29	19
33	C+	24	28	23	18	28	21
34	B-	22	23	20	25	24	21
35	B+	23	29	24	21	30	16
36	B	23	27	19	27	29	18
37	A-	24	29	24	25	28	22

38	D	30	30	22	25	30	25
39	D-	16	25	17	23	26	13
40	A+	24	26	21	23	28	20
41	A-	22	24	15	25	27	20
42	A-	28	27	21	26	24	24
43	B+	25	29	22	25	28	23
44	B-	26	25	23	25	23	20
45	B+	27	30	21	29	29	22
46	C	19	25	20	21	27	23
47	B+	30	22	16	20	18	10
48	A	25	24	23	28	26	25
49	A	29	28	25	27	29	23
50	A	28	29	23	27	26	19
51	D+	21	29	21	20	27	20
52	A-	26	28	21	26	29	21
53	C	22	26	22	25	26	23
54	B	18	30	15	19	27	16

Appendix D: Questionnaire Response Results: Change in Attitude Scores

Participant	Self-Efficacy in Spanish Change	Concept of Intelligence Change	Learning Targets Change
1	-2	0	0
2	-1	-1	0
3	-2	2	4
4	-1	4	0
5	-1	-1	0
6	-1	0	2
7	2	3	3
8	5	1	-1
9	-4	1	4
10	3	-1	-2
11	0	0	0
12	0	0	3
13	-1	0	3
14	-17	-3	-12
15	1	-1	-1
16	1	0	5
17	-2	1	-3
18	2	-3	2
19	1	-2	-3
20	-1	0	-7
21	1	2	-5
22	-4	-3	0
23	-2	-2	-6
24	-5	0	-2
25	3	3	-2
26	-4	-5	0
27	2	-4	-1
28	-2	-2	7
29	-4	1	2
30	0	4	0
31	2	-1	0
32	-3	-1	-1
33	-6	0	-2
34	3	1	1
35	-2	1	-8
36	4	2	-1
37	1	-1	-2
38	-5	0	-3
39	7	1	-4
40	-1	2	-1
41	3	3	5

42	-2	-3	3
43	0	-1	1
44	-1	-2	-3
45	2	-1	1
46	2	-2	3
47	-10	-4	-6
48	3	2	3
49	-2	1	-2
50	-1	-3	-4
51	-1	-2	-1
52	0	1	0
53	3	0	1
54	1	0	1

Appendix E: Spanish 3 Semester 1 Student Learning Targets

Preliminary Chapter 1 Learning Targets

□ I can ask and answer questions about and describe my classes and my teachers, using PE1 vocabulary.
□ I can ask and answer questions about and describe movies from various genres, using PE1 vocabulary.
□ I can identify, categorize, conjugate, and use Regular Verbs in the Present Indicative Mood.
□ I can identify, categorize, conjugate, and use Irregular Verbs in the Present Indicative Mood. (boot verbs, irregular in the yo, completely irregular verbs)
□ I can conjugate and use the verbs ser, estar, and tener in the appropriate situations.
□ I can use verbs like gustar correctly to describe how certain things affect people.
□ I can use interrogative words to correctly form questions.
□ I can comprehend the key details of a short conversation, reading or listening passage about school, movies, and biographical information.

Preliminary Chapter 2 Learning Targets

□ I can describe daily routines, chores, and holidays utilizing chapter vocabulary.
□ I can correctly identify and use verbs that are often followed by an infinitive (*los dobles*).
□ I can comprehend, summarize, and answer questions about the key details of a short conversation, reading or listening passage.
□ I can identify, categorize, conjugate, and use verbs in the Preterit Tense correctly.
□ I can identify and explain what reflexive actions are and provide examples.
□ I can use possessive adjectives, with correct agreement, to describe ownership.
□ I can make connections between and compare cultural traditions in the US with those of Spanish-speaking countries.

Chapter 1 Learning Targets

□ I can identify, categorize, and conjugate a variety of verbs in the Indicative Mood (present, preterit, imperfect, present progressive tenses).
□ I can differentiate between situations that require use of the preterit and imperfect tenses.
□ I can use a variety of transitional devices to enhance my speaking and writing in Spanish.
□ I can describe a sporting event or competition in detail, using precise and appropriate vocabulary.

Chapter 2 Learning Targets

□ I can explain and justify the importance and relevance of art in society and culture.
□ I can identify and explain the significance of symbols, colors, and figures in works by Pablo Picasso and Salvador Dalí.
□ I can describe works of art (style, color, theme, feeling, figures, and symbols) in Spanish.
□ I can make comparisons between works of art and artists in Spanish (with correct adjective agreement and word order).
□ I can describe, elaborate upon, and provide examples of the influence of Picasso and Dalí in contemporary culture in Spanish.
□ I can state, justify, and expand upon my personal opinions of works of art in Spanish.

Appendix F: Further Study: Sample of Potential Interview Items

1. Do you perceive yourself to be a successful Spanish student? Please explain your answer by providing examples or evidence.

2. Did you consider yourself to be a successful Spanish student at the beginning of the semester? Why?

3. Would you describe your general feelings towards Spanish class? Have those feelings changed at all since the beginning of the school year? How?

4. Do you think that some people are just "bad" at Spanish? What makes you say that?

5. Is there anything that you've done this year in this class that has changed your feelings or attitudes towards Spanish? If so, could you describe what that was and how you think it affected you?

6. What are your feelings towards the nature of ability? In effect, do you think it can change and grow, or do you think it's static? What makes you say that?

7. Have you done or observed anything in this class that has affected your ideas about the flexibility of intelligence? If so, can you please describe that?

8. Do you consider yourself to be a metacognitive learner? What makes you say that?

9. What is your opinion on daily learning targets? Has that opinion changed since the beginning of the year? Please explain.

10. Do you know how to use learning targets to assess your ability level and/or monitor your learning? Has anything you've done in this class affected that knowledge?