Examining the stability of goal orientation

Ordene V Edwards
University of Nevada, Las Vegas

Follow this and additional works at: https://digitalscholarship.unlv.edu/rtds

Repository Citation
https://digitalscholarship.unlv.edu/rtds/2029

This Thesis is brought to you for free and open access by Digital Scholarship@UNLV. It has been accepted for inclusion in UNLV Retrospective Theses & Dissertations by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact digitalscholarship@unlv.edu.
EXAMINING THE STABILITY OF GOAL ORIENTATION

by

Ordene V. Edwards

Bachelor of Arts
Fort Valley State University
2003

A thesis submitted in partial fulfillment
of the requirements for the

Master of Science Degree in Educational Psychology
Department of Educational Psychology
College of Education

Graduate College
University of Nevada, Las Vegas
August 2006
Thesis Approval
The Graduate College
University of Nevada, Las Vegas

May 3, 2006

The Thesis prepared by

Ordene V. Edwards

Entitled

Examining the Stability of Goal Orientation

is approved in partial fulfillment of the requirements for the degree of

Master of Science in Educational Psychology

Examination Committee Chair

Dean of the Graduate College

Examination Committee Member

Graduate College Faculty Representative
ABSTRACT

Examining the Stability of Goal Orientation

by

Ordene V. Edwards

Dr. Krista R. Muis, Examination Committee Chair
Professor of Educational Psychology
University of Nevada, Las Vegas

Two studies were conducted to examine whether students' achievement goal orientations change as tasks change. These studies examined whether goal orientations are stable personality traits.

Sixty-six undergraduate students at a large southwestern university enrolled in introductory educational psychology classes participated in these studies. Students self-reported goal orientations using the Patterns of Adaptive Learning Scale (PALS; Midgley et al., 2000) were collected five times over the course of a semester: general context and before two assignments and two exams.

A 3 (goal orientation subscale) x 4 (time) doubly multivariate repeated measures analysis of variance (ANOVA) was conducted. Students' performance scores were also submitted to a Rasch analysis using the program Quest (Adams & Khoo, 1994) to ensure equivalent difficulty levels across tasks. Classroom observations were conducted and teachers’ self-reported classroom goal structures were collected to ensure equivalent instructional techniques across studies.
The findings supported the hypothesis that levels of goal orientations change at different tasks.
# TABLE OF CONTENTS

ABSTRACT ........................................................................................................................... iii

LIST OF TABLES .................................................................................................................. vii

LIST OF FIGURES .............................................................................................................. viii

ACKNOWLEDGMENTS ....................................................................................................... ix

CHAPTER 1 INTRODUCTION ............................................................................................ 1
  Purpose and Description of the Study ............................................................................... 1
  Theoretical Framework and Current Study ...................................................................... 2
  Research Question ........................................................................................................... 9
  Significance of the Study ................................................................................................. 10
  Overview of the Chapters ............................................................................................... 11

CHAPTER 2 REVIEW OF RELATED LITERATURE ....................................................... 13
  Achievement Goal Theory ............................................................................................. 13
  Goal Orientation and Multiple Tasks ............................................................................. 18
  Self-Regulated Learning ................................................................................................. 20
  Winne, Muis, and Jamieson-Noel’s Study ....................................................................... 22
  Summary and Critique .................................................................................................. 23
  Rationale ......................................................................................................................... 24
  The Current Study ......................................................................................................... 26
  Research Question and Hypothesis ............................................................................... 27

CHAPTER 3 METHODOLOGY ........................................................................................... 28
  Study 1 ............................................................................................................................. 28
  Participants ..................................................................................................................... 29
  Measures ......................................................................................................................... 29
  Procedure ......................................................................................................................... 36
  Study 2 ............................................................................................................................. 36
  Participants ..................................................................................................................... 36
  Measures ......................................................................................................................... 37
  Procedure ......................................................................................................................... 39

CHAPTER 4 FINDINGS OF THE STUDY ........................................................................... 40
  Study 1 General Data Analysis ....................................................................................... 40
  Rasch Test Equating Analyses ...................................................................................... 42
LIST OF TABLES

Table 1  Skewness and Kurtosis Values for all Relevant Variables: Study 1.............. 41
Table 2  Rasch Person Ability Descriptive Statistics: Study 1 .................................. 43
Table 3  Descriptive Statistics for Performance Scores: Study 1 .............................. 44
Table 4  Descriptive Statistics and Cronbach αs for Goal Orientations: Study 1........ 52
Table 5  Test-Retest Reliability Coefficients for Goal Orientations: Study 1 .......... 53
Table 6  Correlations Between Goal Orientation and Performance Across Tasks ...... 54
Table 7  Skewness and Kurtosis Values for all Variables: Study 2 ........................... 56
Table 8  Rasch Person Ability Descriptive Statistics: Study 2 .................................. 58
Table 9  Descriptive Statistics for Performance Scores: Study 2 .............................. 59
Table 10 Descriptive Statistics and Cronbach αs for Goal Orientations: Study 2 ..... 67
Table 11 Test-Retest Reliability Coefficients for Goal Orientations: Study 2 .......... 68
Table 12 Correlations Between Goal Orientation and Performance Across Tasks ...... 69
LIST OF FIGURES

Figure 1  Person Equating Scatterplot Between Exam 1 and 2: Study 1 ......................... 44
Figure 2  Person Equating Scatterplot Between Assignments 1 and 2: Study 1 ............. 45
Figure 3  Stability of Goal Orientation Across Time: Study 1 .................................... 53
Figure 4  Person Equating Scatterplot Between Exam 1 and 2: Study 2 ......................... 59
Figure 5  Person Equating Scatterplot Between Assignments 1 and 2: Study 2 .......... 60
Figure 6  Stability of Goal Orientation Across Time: Study 2 ..................................... 68
ACKNOWLEDGEMENTS

I would like to thank Jason Lawrence, my husband, angel, and best friend for believing in me when I did not believe in myself. Thank you for your support and comfort during this time. I love you. I would also like to thank Dr. Krista Muis for her time and help in clarifying the ideas for this thesis. Heartful thanks to my other committee members for their support. Many thanks to Michael Foy and Denise Winsor for their patience and help. Without them, this would not be possible.
INTRODUCTION

Purpose and Description of the Study

Goal orientation theorists (Dweck, 1986; Dweck & Leggett, 1988) have established that students have specific achievement goals in their classes. Theorists have also found that the goal orientations students hold can lead to either adaptive or maladaptive performance patterns in their classes (Ames, 1992). Hence, goal orientation is a critical factor in students' class performance. However, theorists have traditionally tested students' goal orientations at only one time point during the course of their study (Elliott & McGregor, 1999; VandeWalle, Cron, & Slocum, 2001) suggesting that goal orientation is a stable learner characteristic.

The general purpose of this study was to explore the stability of goal orientations over multiple tasks. Researchers in the field of educational psychology (see Winne & Hadwin, 1998) have theorized that learners are continuously changing their strategies and tactics in adaptive ways as the learning event unfolds. They proposed that students might even re-frame their goals to suit the learning situation, which suggests that goals change as a function of context. I examined this empirically by investigating the stability of goal orientation over several tasks.
Two studies were conducted using undergraduate students enrolled in an introductory educational psychology class. Two studies were conducted because the two educational psychology classes participating in the study differed on some factors including the required textbook and class assignments. Students were asked to complete self-report measures to reflect their goal orientations. Midgley et al.'s (2000) Patterns of Adaptive Learning Scale (PALS) was used to examine differences in goal orientations across tasks. To measure teacher's classroom goal structures, teachers completed the teacher version of the PALS once during the study. Classroom observations were also conducted to assess overall instructional designs across classes. This was done to ensure similar classroom goal structures, as classroom goal structures can influence students' achievement goals (e.g., Urdan & Midgley, 2003).

Theoretical Framework and Current Study

Achievement goal theory has emerged as a major new direction in research on students' motivation (Midgley, Kaplan, Middleton, & Maehr, 1998). Achievement goal orientation can be described as the "why" behind student achievement behavior (Finney & Davis, 2003). Dweck and colleagues (Dweck, 1986; Dweck & Leggett, 1988; Elliot & Dweck, 1988) have conducted prominent research into achievement goals and their work has advanced our understanding that individuals' goal orientations influence their achievement patterns. Moreover, goal orientations are considered stable personality traits (Dweck, 1986).

According to Dweck (1986), goal orientation consists of two major classes of goals: 1) mastery (learning goals), in which individuals seek to increase their competence, to
understand or master something new, and 2) performance goals, in which individuals
seek to gain favorable judgments or avoid negative judgments of their competence.
Dweck's classification of goals is considered the dichotomous goal framework.

Empirical research into the dichotomous goal framework has identified positive
relationships between mastery goals and adaptive patterns of learning (Newman, 1998;
Ames & Archer, 1988; Butler, 1987; Jagacinski & Nicholls, 1987). On the other hand,
other researchers (Anderman, Griesinger, & Westerfield, 1998; Dweck, 1986; Dweck &
Leggett, 1988; Dweck, 1988; Jagacinski & Nicholls, 1987) have linked maladaptive
patterns of learning to performance goals.

The trichotomous goal framework, where performance goals are partitioned into
approach and avoidance motivational goal orientations (Elliot & Harackiewicz, 1996;
Middleton & Midgley, 1997; Elliot & Church, 1997), was later proposed. Theorists
identified performance approach goals as goals students have to perform better than
others and performance avoidance goals as goals students have to avoid performing
worse than other students, rooted in a fear of failure. Research examining the
trichotomous framework has revealed that mastery goals are positively related to adaptive
learning patterns (Elliot & McGregor, 1999; Elliot & Church, 1997; Elliot &
Harackiewicz, 1996) and performance avoidance goals are negatively related to
performance outcomes (for reviews, see Elliot & Harackiewicz, 1996; Elliot & Church,
1997; Middleton & Church, 1997). However, the results for performance approach goals
have been mixed with some studies linking performance goals with positive performance
outcomes (Elliot & Harackiewicz, 1996; Elliot & Church, 1997) while others with
negative outcomes (Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Elliot & Church, 1997).

In the goal theory literature, the trichotomous framework has been the most prominent. Recently, however, this goal framework has been revised to partition the mastery goals and the performance goals into a 2 (mastery vs. performance) x 2 (approach vs. avoidance) model of achievement goal orientation (Elliot & McGregor, 2001). Elliot and McGregor (2001) define mastery avoidance goal, as goals students have to avoid not learning or not mastering the content of a specific class. Mastery avoidance goals have been linked to negative performance outcomes (Elliot & McGregor, 2001; Finney, Peiper & Barron, 2004).

To examine relations between achievement goals and performance, goal theorists have assumed goals are stable characteristics, but have not assumed that goals can change as a function of task. However, self-regulated learning theorists (Winne, Jamieson-Noel, & Muis, 2002) have argued that the context of a task changes individuals’ achievement related-behaviors towards a goal. That is, during the process of self-regulation, learners set goals for each task and each task has a different context. Thus, individuals will vary their behaviors (e.g. tactic and strategies) to reach their goals as a function of task context. Context then plays a critical role in the link between goals and performance outcomes. Moreover, Dweck and Leggett (1988) proposed that different achievement goal orientations function in creating different behavioral patterns in which individuals respond to the type of task in any achievement-related situation. Given this, researchers have started to examine goal orientation over multiple tasks (e.g., Elliot & McGregor, 1999; VandeWalle, Cron, & Slocum, 2001).
For example, Elliot and McGregor (1999) investigated the effects of goal orientation on short-term versus long-term recall of course material. Their results showed that performance approach goals had a positive relationship with performance on the midterm exam and were unrelated to performance on the pop quiz. However, performance avoidance goal orientation had a negative relationship with performance on the midterm exam and pop quiz. Finally, mastery goals were unrelated to exam performance but were positively related to the pop quiz.

Similarly, VandeWalle, Cron, and Slocum (2001) assessed goal orientation over two performance events but obtained slightly different results. They found that mastery goals were positively related to task performance on the first exam and remained positive on the second exam. Performance approach goals had a positive relationship with performance on the first exam but diminished to a non-significant level on the second exam. Finally, performance avoidance goals retained a negative relationship with performance over the two exam events.

Likewise, WandeWalle, Brown, Cron and Slocum (1999) examined the effect of goal orientation on performance in a longitudinal study. They assessed goal orientation over the course of a three-month sale promotion for medical supplies distributors. They examined the effect of employees’ goal orientations on their sales performances over time. They found that mastery goal orientation had a positive relationship with sales performance. However, performance goal orientation was found to have no relationship with sales performance.

Williams, Donavan and Dodge (2000) also examined individuals’ goals over time. They studied the process by which individuals revise their goals over multiple tasks.
They sought to examine whether an individual’s performance goals are influenced by one’s perceived ability and past performances. Essentially, they assessed the effect of feedback on goal choices by examining track and field athletes over the course of a competitive season. Participants completed goal-progress questionnaires after each competition. Their results demonstrated that athletes set performance goals higher than recent past performance.

For all but one study (Williams et al., 2000) reported here, the researchers collected performance data over multiple tasks but consistent with their beliefs about the stability of goals, they only collected self-reported goal orientations once in the study. This suggests they implicitly assume that goals are stable and hence context does not change goals. Moreover, none of the studies examined whether goals change as a function of task context. However, models of self-regulated learning have suggested otherwise. Self-regulated learning refers to the way individuals regulate their own cognitive processes within an educational setting (Pusstinen & Pulkken, 2005). Models have been proposed to explain the self-regulation process, among them, Winne and Hadwin’s (1998) four-phase model.

Winne and Hadwin (1998) proposed that self-regulated learning has four stages including task definition, goal setting and planning, enacting tactics, and adaptation. In phase one, learners develop perceptions (e.g., level of difficulty) about a task. In phase two, learners set goals and develop plans to reach these goals. In phase three, learners are actively engaged in using tactics and strategies formed in phase two. In the fourth and final phase, learners evaluate whether the products created match the standards set for the task. For each task, learners set different goals and may re-frame these goals as the task
unfolds. Accordingly, goals may change as a function of task. But can goal orientation change as a function of task? To date, no empirical research has examined this possibility.

In fact, the majority of studies that have examined relations between goal orientation and performance measured goal orientation at one time and with no particular task in mind. Furthermore, no studies thus far in the literature have provided strong evidence of the stability of goal orientations across multiple tasks. A powerful approach to this inquiry would be to include task-specific measures of goal orientations across multiple tasks.

One study (Winne, Muis, & Jamieson-Noel, 2005) attempted this approach. They examined the role of general achievement goal orientation, metacognitive self-regulation and self-efficacy across multiple tasks and feedback events in an undergraduate classroom. They examined the relationship between goal orientations and performance over four tasks (two think papers, a midterm and a final exam) and multiple feedback episodes.

Winne et al. (2005) found that a mastery-approach goal orientation had a positive relationship with performance on the first assignment but had no relationship with performance on subsequent tasks. Mastery-avoidance goals had a negative relationship with performance on the first task, but had no relationship with performance on subsequent tasks. Moreover, they found that performance-approach goals had no relationship with performance across tasks. Performance-avoidance goals had no relationship with performance on the first assignment, no relationship on the second assignment, and a negative relationship on the midterm. Finally, they found that students’
overall goal orientations changed as a function of feedback over multiple contexts. However, a review of Winne et al.’s (2005) study revealed a few methodological flaws. My research addresses these issues.

Winne et al. (2005) provided students with four tasks (two think papers, one midterm exam and one final exam) over the course of a semester. After each task was completed (with the exception of the final exam), students were asked to fill out the Achievement Goal Questionnaire (AGQ). Hence, they only examined measures for three tasks: two think papers and the mid-term exam. The think papers and the exam that students took, however, had different formats; the think papers were essays and the midterm exam was multiple-choice. When students completed the AGQ, they were instructed to think about the course in general, and not each specific task. This constitutes the first methodological flaw because theorists have suggested that each task in a particular course has variable contexts (Winne et al., 2002). Thus, Winne et al. (2005) provided students tasks with varied formats but did not control for the different task contexts, which could have played a role in changes in the level of goal orientations found in their study. Consequently, they failed to rigorously examine whether goal orientations change as context changes.

Second, in assigning participants different tasks, they did not control for difficulty levels across tasks. Goal theorists (e.g. Dweck & Legget, 1988; Ames & Archer, 1988; Dweck, 1986) have suggested that task difficulty is critical in the goal orientation framework. In fact, empirical research (see Dweck & Legget, 1988; Ames & Archer, 1988) has supported a link between task difficulty and goal orientation. Thus, level of
difficulty could have contributed to changes in the level of goal orientations found in Winne et al.'s (2005) study.

To address the first flaw, in both studies, the stability of goal orientation over four tasks – two assignments (same format) and two exams (same format) were examined. I collected self-reported goal orientation measures at the beginning of the course as a general context, just prior to students completing their first assignment, and again before students completed exam 1. This process was repeated for each subsequent assignment and exam. Moreover, each questionnaire was task-specific. The goal orientation questionnaire was modified so that students attended to the specific task.

To address the second flaw, I submitted students’ performance data to a \(^1\)Rasch analysis using the program Quest (Adams & Khoo, 1994) to assess whether difficulty levels were equal across tasks. In addition, since two studies were conducted in different introductory educational psychology classes with different participating instructors, classroom observations were conducted to examine the similarities or differences in instructional designs. Also, instructors completed a measure to assess their classroom goal structures. Thus, the purpose of this paper was to examine the stability of goal orientations over multiple tasks.

Research Question

One general research question was examined in these studies: Do students’ achievement goal orientations change as a function of task specificity? To address this research question, the malleability of goal orientation over four tasks – two assignments

\(^1\) Rasch Analysis provides person ability and item difficulty estimates for performance data. An extensive description of this analysis is provided in Chapter 3.
and two exams on goal orientation was examined in each study. Self-reported goal orientation measures were collected at the beginning of the course as a general context, just prior to students completing their first assignment, and again before students completed exam 1. This process was repeated for each subsequent assignment and exam. Moreover, each questionnaire was task-specific. The goal orientation questionnaire was modified so that students attended to each specific task.

Students' performance data was also submitted to a Rasch analysis using the program Quest (Adams & Khoo, 1994) to ensure comparable difficulty levels across tasks. In addition, since two introductory educational psychology classes with different participating instructors were used, classroom observation was conducted. In addition, instructors completed a measure to assess their goal-oriented instructional designs. This was done to ensure similar classroom goal structures, as classroom goal structures can influence students' goals (e.g., Urdan & Midgley, 2003).

Significance of the Study

Identifying students' goal orientations over tasks in a course is critical at the university level. Act (1998, April 1) reported that the graduation rate at four-year public institutions fell to 44.2 percent in 1998, while the rate at private colleges dropped to a record 56.6 percent. This indicates that college drop out rates are a major problem in universities. Theorists (Newman, Wehlage, & Lamborn, 1992) have suggested that academic engagement is a factor that can influence withdrawal from school. They propose that students who have poor academic engagement (engagement in classroom and school activities) are more likely to drop out of school. They also assert that poor
academic performance is a critical predictor of dropping out. Given these drop out rates and knowing that goal orientations are related to patterns of learning and can increase other facets of motivation (e.g., Wolters, Yu, & Pintrich, 1996; Middleton & Midgley, 1997; Kaplan & Midgley, 1997; Butler, 1987; Elliott & Harackiewicz, 1996; Elliott & Church, 1997), research is needed that focuses on identifying students' goal orientations over time in the college classroom. By better understanding the stability of goal orientations, instructional techniques can be implemented that encourage goal orientations that improve adaptive performance patterns and outcomes. Furthermore, this study sought to advance theory about the stability of goals. Previous studies in educational psychology that have examined goal orientation have measured goal orientation at only one point in time and have assumed goals to be constant over tasks. This study sought to advance theory by assessing whether goal orientations are stable personality traits.

Overview of the Chapters

The following overview of the chapters serves as an advance organizer. Chapter 2 entails the literature review. This review is divided into three major sections: achievement goal theory, goal orientation and multiple tasks and, Winne et al.'s (2005) study. After the third section, a summary and critique is given. Lastly, Chapter 2 culminates with the presentation and discussion of the rationale, research questions and hypotheses of this thesis.

Chapter 3 entails the methodology of the studies and is divided into three sections per study. The first section describes the participants that were sampled for the study. Section
two presents a detailed description of all the instruments that participants completed for the study. In section three, a detailed explanation of how the study progressed is presented. The aims of and hypotheses for the studies are outlined before the presentation of each study. Chapter 4 entails a description of how the data for each study was analyzed followed by chapter 5, which culminates this thesis with a summary and recommendations for future research into the stability of goal orientation.

My research will extend the goal orientation literature to include a more grounded approach to theorizing about goals and task specificity. Results from the study will also prove useful for educational practice because a better understanding about the relations between goals and context may improve instructional designs.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Achievement Goal Theory

Over the past two decades, a majority of the theoretical and empirical work conducted in the achievement motivation literature has concentrated on achievement goal theory (Elliot & McGregor, 2001). This theory has developed within a social-cognitive approach to motivation that emphasizes cognitive factors, such as how individuals interpret situations, the events of situations, and how they process information about these situations (Dweck, 1986; Dweck & Leggett, 1988). Essentially, achievement goal theory describes reasons behind students' achievement behaviors (Finney & Davis, 2003). More specifically, Midgley, Kaplan, and Middleton (2001) define achievement goals as "the purposes for behavior that are perceived or pursued in a competence-relevant setting" (p. 77).

The work of Dweck and colleagues (Dweck, 1986; Dweck & Leggett, 1988; Elliot & Dweck, 1988) has particularly broadened our understanding of goal orientation. Dweck identified two major classes of goals: 1) Mastery (learning) goals, in which individuals seek to increase their competence, to understand or master something new, and 2) performance goals, in which individuals seek to gain favorable judgments or avoid negative judgments of their competence. Performance goals are from an interpersonal
perspective (relative to others), whereas mastery goals are from an intrapersonal perspective (relative to oneself). Achievement goal orientation is theorized to be a stable learner characteristic (Dweck, 1986).

Dweck and Leggett (1988) posited that individuals’ implicit theories of themselves and others orient them toward either mastery or performance goal in achievement situations, which in turn influence their achievement patterns. Some individuals favor an incremental theory of intelligence; they believe that intelligence is malleable, increasable, and controllable. In contrast, others favor an entity theory of intelligence; they believe that intelligence is a fixed or an uncontrollable trait. Individuals who hold the incremental theory of intelligence are more inclined towards learning goals and individuals with an entity theory of intelligence pursue performance goals.

Other theorists have provided complementary definitions of performance and mastery goals. For example, Nicholls and colleagues (see Nicholls, Cobb, Yackel, Wood, & Wheatley, 1990) identified two goal patterns; ego-involved goals and task-involved goals. Much like Dweck’s (1986) theory, individuals who pursue ego-involved goals (performance goals) seek to maximize favorable judgments and minimize negative judgments of their competence. On the other hand, individuals pursuing task-involved goals (mastery goals), concentrate on mastering the task thereby increasing their competence. Ames (1992) conceptualized that mastery goals (task-involved goals) are associated with adaptive outcomes, and performance goals (ego-involved goals) are associated with maladaptive outcomes.

Empirical research has supported the dichotomous goal framework and has identified different relationships between mastery and performance goals with other academic
constructs. Mastery goals have been found to positively correlate with help-seeking (Newman, 1998), attribution of success to effort (Ames & Archer, 1988), positive affect following successful effort (Jagacinski & Nicholls, 1987), preference for challenging tasks (Ames & Archer, 1988) and intrinsic interest in learning (Butler, 1987). Given these results, it is apparent that mastery goals are linked to positive factors.

However, the findings relating to performance goals have been conflicting, with some studies linking performance goals to maladaptive patterns of learning, such as cheating (Anderman, Griesinger, & Westerfield, 1998), reluctance to seek academic assistance (Newman, 1998), avoidance of challenging tasks (Dweck, 1986; Dweck & Leggett, 1988; Elliot & Dweck, 1988), and negative affect following failure (Jagacinski & Nicholls, 1987). While others report no relationship between performance goals and maladaptive patterns of learning (Middleton & Midgley, 1997; Kaplan & Midgley, 1997), others find positive relationships between performance goals and adaptive patterns of learning (Wolters, Yu, & Pintrich, 1996; Pintrich 2000b).

Recently, researchers have theorized about an alternative framework that partitioned the performance goal orientations into approach and avoidance motivational goal orientations (see Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Elliot & Church, 1997; Pintrich, 2000b). This distinction arose in part because of the inconsistent evidence about the effects of performance goals on various outcomes (Eccles & Wigfield, 2002). These theorists reorganized the dichotomy of achievement goals into a trichotomous framework: mastery, performance-approach, and performance-avoidance. Essentially, performance-approach goals entail engaging in achievement tasks to demonstrate ability, whereas performance-avoidance goals involve disengaging in
achievement tasks in order not to appear incompetent (Eccles & Wigfield, 2002).

Developing the trichotomous framework of goal orientation helped clarify the inconsistencies about the effects of performance goals on performance outcomes (Rawsthorne & Elliot, 1999).

Most research adopting the trichotomous goal framework has focused on the consequences of pursuing different goals and each goal has been linked to different outcomes (Elliot, 1999). For example, mastery goals have been found to relate to positive outcomes, such as long-term retention of information (Elliot & McGregor, 1999), intrinsic motivation (Elliot & Church, 1997; Elliot & Harackiewicz, 1996), absorption during task involvement (Elliot & Harackiewicz, 1996), help seeking (Ryan & Pintrich, 1998), persistence (Pintrich, 2000a), and high performance outcomes (Elliot & Church, 1997). Performance approach goals have been found to correlate with positive factors such as absorption during task involvement (Elliot & Harackiewicz, 1996), high performance outcomes (Elliot & Church, 1997), academic self-concept (Skaalvik, 1997; Pajares, Britner, & Valiante, 2000), task value (Wolters et al., 1996), and intrinsic motivation (Elliot & Harackiewicz, 1996; Elliot & Church, 1997). Performance approach goals have also been linked to negative outcomes such as test anxiety (Elliot & McGregor, 1999; Middleton & Midgley, 1997), low self-efficacy (Skaalvik, 1997), and higher avoidant help seeking (Ryan & Pintrich, 1998; Middleton & Midgley, 1997). Finally, performance avoidance goals have been associated with negative outcomes, such as low absorption during task engagement (Elliot & Harackiewicz, 1996), an unwillingness to seek help with schoolwork (Middleton & Midgley, 1997), and reduced intrinsic motivation (Elliot & Church, 1997). Construct validation studies through factor
analytic techniques have confirmed the independence of the three goal constructs (see Elliot & Church, 1997; Middleton & Midgley, 1997).

Although the trichotomous framework continues to be the most prominent model in research, Elliot and McGregor (2001) proposed a 2 x 2 achievement goal framework whereby a mastery avoidance goal orientation was added as a new dimension of goal orientation. They partitioned the mastery goals and the performance goals into a 2 (mastery vs. performance) x 2 (approach vs. avoidance) model of achievement goal orientation. According to Elliot and McGregor (2001), “in the mastery avoidance goal construct, competence is defined in terms of the absolute requirements of the task or one’s own pattern of attainment, and incompetence is the focal point of regulatory attention” (p. 502). They cited a few examples of mastery avoidance: striving to avoid misunderstanding or failing to learn course material, striving not to make an error in a business transaction, and striving not to miss a free throw in a basketball game. These theorists stress that “the evaluative referent of the mastery avoidance goal orientation is specific to the task itself or the person’s own attainment trajectory, and the focus is on avoiding a negative possibility” (p.502). For example, a student enrolled in an introductory statistics class with a mastery avoidance goal orientation would seek to avoid not fully learning the concept of the normal distribution, measures of central tendency, variability, etcetera, and would be worried that he/she may not fully master the content of the course.

Research that has examined the effects of mastery avoidance goals has found that these goals were correlated with negative factors such as disorganized studying, state test anxiety, and worry (Elliot & McGregor, 2001), and negatively predicted semester GPA.
Empirical research has supported this 2 x 2 goal framework; construct validation studies through factor analytic techniques have validated the independence of the four goal constructs (see Elliot & McGregor, 2001; Finney et al., 2004; Barron, Finney, Davis, & Owens, 2003; Winne et al., 2005).

Goal Orientation and Multiple Tasks

Self-regulated learning theorists (e.g., Winne et al., 2002) have proposed that task context changes students’ achievement-related behaviors towards goals inherent in every task. They have argued that each course has variable tasks and each task has different activities, contexts and conditions under which they are conducted. Thus, individuals engaging in achievement-related situations would adopt varying and sometimes dissimilar behaviors (tactics and strategies) as a function of task context. Hadwin, Winne, Stockley, Nesbit, and Woszcyna (2001) validated this notion when they found that learners, who responded to a single set of self-report measures about self-regulated learning and tactics relative to different assignments, responded to the same self-report measure in varying levels as context changed.

Similarly, achievement goal theorists have suggested that students’ academic behaviors are influenced by the choice of tasks. Each goal orientation creates different cognitive and affective patterns and the goal-related differences in these patterns create different academic behavioral patterns as a function of task choice. Given this, achievement goal theorists began to examine goal orientation over multiple tasks.

For example, Elliot and McGregor (1999) investigated the effects of goal orientation on short-term versus long-term recall of course material. They assessed the effects of
mastery, performance approach, and performance avoidance goal orientations on midterm exam performance and the influence of these goal orientations on retention of material presented on the midterm by way of an end-of-semester pop quiz. The results demonstrated that performance approach goals had a positive relationship with performance on the midterm exam and were unrelated to performance on the pop quiz. However, performance avoidance goal orientation had a negative relationship with performance on the midterm exam and pop quiz. Finally, mastery goals were unrelated to exam performance but were positively related to the pop quiz.

Similarly, VandeWalle et al. (2001) assessed goal orientation over two performance events but obtained slightly different results. They examined the relationship between goal orientation and performance on a first exam and task performance on a second exam after receiving feedback about prior task performance on the first exam. They found that mastery goals were positively related to task performance on the first exam and remained positive on the second exam. Performance approach goals had a positive relationship with performance on the first exam but diminished to a non-significant level on the second exam. Finally, performance avoidance goals retained a negative relationship with performance over the two exam events.

Likewise, WandeWalle, Brown, Cron and Slocum (1999) examined the effect of goal orientation on performance in a longitudinal study. They assessed goal orientation over the course of a three-month sale promotion for medical supplies distributors. They examined the effect of employees’ goal orientations on their sales performances over time. They found that mastery goal orientation had a positive relationship with sales
performance. However, performance goal orientation was found to have no relationship with sales performance.

Williams, Donavan and Dodge (2000) also examined individuals’ goals over time. They studied the process by which individuals revise their goals over multiple tasks. They sought to examine whether an individual’s performance goal are influenced by one’s perceived ability and past performances. Essentially, they assessed the effect of feedback on goal choices by examining track and field athletes over the course of a competitive season. Participants completed goal-progress questionnaires after each competition. Their results demonstrated that athletes set performance goals higher than recent past performance.

In all studies, with the exception of the Williams et al.’s (2000) study, the researchers examined goals at only one point because of their assumption the researchers made that goals are stable. No study to date has considered that achievement goals may be task specific. Why might they be task specific? Self-regulated learning theorists have suggested that goals can change.

Self-Regulated Learning

“Understanding students’ capacity to direct their own learning in school and beyond has been a central topic of discussion among practicing educators, policy makers, and educational researchers alike” (Boekaerts & Corno, 2005 p. 201). In the last twenty years, self-regulated learning has gained considerable attention (Puustinen & Pulkkinen, 2001), which resulted in an extension of the self-regulated learning literature. Self-regulated learning is viewed as “an intermediate construct describing the ways in which individuals
regulate their own cognitive processes within an educational setting” (Pusstinen & Pulkken, 2005, p.269). With growing interest in self-regulation came the development of several theoretical models of self-regulated learning including Winne and Hadwin’s (1998) four-phase model.

Winne (1996) described self-regulated learning as metacognitively guided behavior that enables students to regulate the way they use cognitive tactics and strategies in the face of a task. Winne and Hadwin (1998) proposed that self-regulated learning has some of the properties of both an aptitude (a relatively stable personal trait) and an event (a snapshot that freezes activity in motion). However, in their four-stage model, self-regulated learning is described as an event (see Winne & Hadwin, 1998; Winne, 1996; Winne & Perry, 2000; Winne et al, 2002a).

In Winne and Hadwin’s (1998) four-phase model, self-regulated learning has four stages – task definition, goal setting and planning, enacting tactics, and adaptation. In phase one, learners develop perceptions about features of a task. The perception of a goal for the task is an important element in this phase. A student’s perceived goals may be that of the teacher, the text, or him or herself. In phase two, learners set goals and develop plans to reach these goals. In this phase, students may re-frame their goals if the standards are different from what was perceived for the task in stage one. In phase three, learners are actively engaged in using tactics and strategies formed in phase two. In the fourth and final phase, learners evaluate whether the products created (information created by operations) match the standards set for the task (criteria against which the products are monitored). In the four-phase model, each task has different goals, standards, and strategies to reach these goals and these goals change as each learning task
unfolds. This indicates that context changes goals. To date, no studies have examined whether achievement goals change as a function of context. One study, however, did measure students' goals over multiple contexts to examine whether feedback changed the goal framework. This study is described next.

Winne, Muis and Jamieson-Noel's Study

Recently, Winne et al. (2005) attempted to examine "the stability of goal orientation", but focused solely on feedback and not tasks. They examined relations between achievement goal orientation, metacognitive self-regulation, and self-efficacy across two think papers and a midterm exam and feedback events in an undergraduate classroom. Their results indicated that mastery-approach goal orientation had a positive relationship with performance on the first assignment but had no relationship with performance on subsequent tasks. Mastery-avoidance goals had a negative relationship with performance on the first task, but had no relationship with performance on subsequent tasks. Performance-approach goals had no relationship with performance across tasks. Performance-avoidance goals had no relationship with performance on the first assignment, no relationship on the second assignment, and a negative relationship on the midterm. Essentially, they found that all goal orientations had varying and sometimes no relations to performance across tasks. They also found that students’ overall goal orientations changed as a function of feedback. A review of Winne et al.'s (2005) study revealed a few methodological flaws. My research addresses these flaws, which are described in the rationale.
Summary and Critique

The results of the goal orientation studies reported in the literature review suggest that, irrespective of the goal framework, different goal orientations affect achievement-related behaviors in different ways. Mastery-approach goal orientation is generally linked to adaptive patterns of behavior while mastery avoidance and performance avoidance goals are linked to maladaptive patterns of behavior. On the other hand, performance approach goals are linked to both adaptive and maladaptive patterns. However, while the studies on students' goal orientations and their effects on patterns of learning are extensive, they do not identify the possibility of task influencing goal orientations and subsequent performance. Does context change the orientation framework and subsequently affect learning patterns?

Studies reviewed in the literature (Elliott & McGregor, 1999; VandeWalle et al., 2001; Williams et al., 2000; VandeWalle et al., 1999) examined goal orientations over multiple performance and feedback events. They found that different goal orientations create different task performance outcomes in the face of feedback over multiple tasks. However, their results solely examined the effects of feedback on performance and not the effects of task context on performance. Moreover, though these studies collected performance and feedback data over multiple tasks, all but one (Williams et al., 2000) only collected self-reported goal orientation once. This is mainly due to goal theory's postulation that goals are stable. But are goals stable? Does context change goals? A model of self-regulated learning suggests that they can change.

Winne and Hadwin (1998)'s four-phase model of self-regulation proposed that individuals' goals change as self-regulation proceeds. However, the model does not
provide an extensive examination of changes in goal orientations as a function of tasks. Does task context change students’ achievement goal orientations? A powerful approach to examining whether tasks change goal orientations would be to include measures of goal orientations across multiple tasks, with a specific focus on tasks. This would allow for an examination of whether context changes the goal framework.

Rationale

In Winne and Hadwin’s (1998) four-stage model of self-regulated learning, learners are continuously changing their strategies and tactics in adaptive ways as the learning events unfold. Moreover, Winne and Hadwin (1998) proposed that “in stage two, students may re-frame the goals that were products of stage one if the students’ personal standards differ from those that were first perceived for the task” (p. 283). This suggests that goals change as the learning task unfolds. Thus, it may not be incorrect to assume that if goals change, it may be that students’ goal orientations also change over tasks (context) and this subsequent goal orientation may be the best predictor of students’ performance outcomes.

However, in the literature investigating goal orientation, I found only two studies that assessed goal orientation over multiple tasks (Winne et al, 2005; Williams et al., 2000), but Williams et al. (2000) focused solely on examining change in performance goals as a function of feedback. Generally, researchers (e.g. VandeWalle et al., 2001; Elliot & McGregor, 1999; VandeWalle et al., 1999) failed to look at goal orientation at different points in time to assess the stability or instability of the goal orientation constructs. This suggests that achievement goal theorists assume goal orientations are stable personality
traits that are unaffected by context. As a matter of fact, Dweck and Leggett (1988) characterize goal orientation as a stable personality trait that produces specific cognitive, affective, and behavioral patterns.

To examine this assumption, Winne et al. (2005) examined achievement goal orientation across multiple tasks in an undergraduate classroom. They examined the malleability of goal orientations over four tasks and multiple feedback episodes. They provided students with four tasks (two think papers, one midterm exam and one final exam) over the course of a semester. After each task was completed (with the exception of the final exam), students were asked to fill out the goal orientation questionnaire. Hence, they only examined measures for three tasks: two think papers and the mid-term exam.

However, the think papers and the exam that students took had different formats; the think papers were essays and the midterm exam was multiple-choice. Theorists have suggested that each task in a particular course has variable contexts. Winne et al. (2002) indicated that in a particular course there can be different tasks and each task has its own context and condition under which it is pursued. Thus, Winne et al (2005) in providing students tasks with varied formats did not control for the different task contexts (format), which could have been a key in the change in the level of goal orientations that they found in their study. Moreover, they focused mainly on changes in goals as a function of feedback and accordingly did not rigorously examine whether context changes goal orientations.

Second, in assigning participants different tasks, they did not control for difficulty levels across tasks. Consequently, varying difficulty levels across task could have
resulted in changes in levels of goal orientations that they observed in their study. Goal theorists (e.g. Dweck & Legget, 1988; Ames & Archer, 1988; Dweck, 1986) have proposed that in any achievement-related situation, individuals with different goal orientations will engage in different academic behaviors as a function of the difficulty level of the task. In fact, empirical research (see Dweck & Legget, 1988; Ames & Archer, 1988) has supported a link between task difficulty and goal orientation.

The Current Study

The present research comprises two studies designed to explore the malleability of goal orientation. Two studies were conducted because the two participating classes differed on their required texts and class assignments. To examine whether goals change as a function of task context, I assessed goal orientation over four tasks – two assignments (same format) and two exams (same format) for each study. I collected goal orientation measures over the course of a semester: at the beginning of the course as a general context, just prior to students completing their first assignment and, again before students completed each subsequent assignment and exam. For the second and subsequent questionnaires, items reflected specific tasks to address changes in context.

Students’ performance data were collected and submitted to a Rasch analysis using the program Quest (Adams & Khoo, 1994) to ensure that difficulty levels were equal across tasks. Classroom observations were also conducted to examine the similarities or differences with instructional design across the two introductory educational psychology courses. Instructors also completed a measure to examine their goal-oriented instructional
techniques. The aims of and hypotheses for the studies will be provided before the presentation of each study. The research question and hypothesis are presented next.

Research Question and Hypothesis

One research question was investigated in these studies: Do students’ achievement goal orientations change as a function of task specificity? Based on Winne et al.’s (2005)’s results from the examination of goal orientation over multiple tasks, it was hypothesized that students’ levels of goal orientations will change over time as a function of task context. This prediction was made based on Winne and Hadwin (1998)’s theoretical assumption that goals change as a function of contexts. Winne and Hadwin (1998)’s four-phase model of self-regulation proposed that learners continually re-frame and adopt goals as the learning task unfolds and as they engage in each task.
CHAPTER 3

METHODOLOGY

Study 1

The first study explored whether goal orientation changes as the task context changes. I predicted that all goal orientations (i.e. mastery goal orientation, performance-approach goal orientation, and performance-avoidance goal orientations) will change as a function of context.

Participants

Thirty-three students enrolled in a lecture-based introductory educational psychology class at a large southwestern university participated in the study in return for extra credit toward their final course grade. Twenty-four were females and nine were males. The combined mean age of the students was 21.15 years old (SD = 2.20) with a range of 18 to 29 years. The mean self-reported GPA was 3.26 (SD = .39, N = 33). Approximately seventy-six percent were education majors. Students were participating in a multifaceted study and responded to another questionnaire about study strategies and self-efficacy that is not relevant to the research question examined here. The instructor was a graduate student, teaching undergraduate level courses for approximately two semesters. Students' performances were based on the standard university percentage scale (e.g., 90 – 100% is
Before conducting this research, approval was obtained on December 16, 2005 by the University of Nevada, Las Vegas Institutional Review Board. All participants received and signed a university institutional review board approved consent form. Consent forms are presented in Appendix I.

Measures

Demographics Questionnaire. Students completed a demographic questionnaire to provide information such as age, major, minor, etcetera. The demographic questionnaire is presented in Appendix II.

Goal Orientation. Items were taken from the student version of the Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000) to assess students' mastery, performance-approach and performance-avoidance goal orientations on each task. Permission from one of the authors of the PALS was granted. The student version of the PALS is presented in Appendix II. Items on the scale are anchored along a 5-point scale ranging from 1 (not at all true) to 5 (very true). The PALS generates three non-overlapping subscales: mastery goal orientation (5 items), for example “It’s important to me that I learn a lot of new concepts this year,” performance-approach goal orientation (5 items), for example “One of my goals is to show others that I’m good at my class work,” and performance-avoidance goal orientation (4 items), for example “One of my goals in class is to avoid looking like I have trouble doing the work.” Only category 1 (not at all true of me), category 3 (somewhat true) and category 5 (very true) are anchored along the continuum. Students were asked to indicate how the number corresponding to each statement on the scale best describes what they think.
Previous research by Midgley et al. (2000) demonstrated good fit. Confirmatory Factor Analysis (CFA) on the 14 personal goal orientation items confirmed the expected model and showed a Goodness of Fit Index (GFI) of .97 and an Adjusted Goodness of Fit Index (AGFI) of .95. The mastery, performance-approach, and performance-avoidance goal orientations all loaded on different latent factors. The authors reported reliability alphas for each subscale as follows: mastery goal orientation .85, performance-approach goal orientation, .89, and performance avoidance goal orientation, .74.

For the purpose of this study, aside from the general context, the instructions and wording of items on the scale were slightly altered to refer to a specific task. For example, the instruction “Here are some questions about yourself as a student in this class. Please circle the number that best describes what you think” was altered to “Here are some questions about yourself in terms of assignment one. Please circle the number that best describes what you think.” Similarly, the item “It is important that I don’t look stupid in class” was altered to “It is important that I don’t look stupid on assignment one.” Responses to the items within each subscale were summed and then averaged to obtain a subscale score for each participant across all five waves of data collection. After the second wave of data collection, the order of items was randomized.

Items were also taken from the teacher version of the Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000) to assess teachers’ goal related approaches to instruction. The teacher version of the PALS is presented in Appendix II. Items on the scale are anchored along a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The teacher version of the PALS generates two non-overlapping subscales: mastery approach (4 items), which assess the use of instructional approaches that
encourage students to develop competence, for example “I make a special effort to recognize students’ individual progress even if they are below grade level,” and performance approach (5 items), which assess the use of instructional approaches that encourage students to demonstrate competence, for example “I give special privileges to students who do the best work.” Only category 1 (strongly disagree), category 3 (somewhat agree) and category 5 (strongly agree) are anchored along the continuum. Teachers were asked to indicate how the number corresponding to each statement on the scale best describes what they think. The instructor’s responses on the items for each goal structure were averaged to form the mastery and performance classroom goal structure subscales.

Previous research by Midgley et al. (2000) demonstrated good fit. Confirmatory Factor Analysis (CFA) on the goal structure items confirmed the expected model and showed a GFI of .96 and an AGFI of .94. The mastery and performance goal structures all loaded on different latent factors. The authors reported reliability alphas of .69 for each subscale.

**Performance.** During the course of the study, students were assigned four tasks: two exams and two assignments. Exams were multiple choice formats completed in class for approximately 1 hour and 45 minutes each. Exam 1 and 2 consisted of 55 and 57 questions, respectively. For assignment one, students were given eight questions spanning modules 1 through 7 of their educational psychology text. Students were instructed to provide short essay answers to any two of the eight questions. For assignment two, students were again instructed to complete two questions out of eight choices. A rubric was provided to students as a guide to completing all assignments. All
assignments were submitted online. The instructor calculated performance on tasks by summing students’ points for correct responses. By the end of the study, each participant had a total of four performance scores.

*Classroom Observation.* The classroom observation worksheet is presented in Appendix II. A sample item from this checklist is as follows: “Teaching style commanded a majority of students to be actively involved.” Teacher observation was conducted once during a routine lecture. The researcher decided a priori the facets of classroom observation that would be observed: content organization, content knowledge, presentation, instructor-student interaction, and goal-oriented instructional techniques. Some aspects of goal-oriented instructional techniques were observed to cross-validate the instructor's self-reported goal-related approaches to instruction measured on the teacher version of the PALS. Before the start of class, the instructor was briefed on the facets of instructional design that would be observed. Triangulation involved an audio recording of the lecture with consent from the teacher. Observation lasted for 1 hour and 45 minutes, an entire class period. During this time, the researcher sat at the back of the class and did not interact with the instructor nor participate in class activities. The observation worksheet was used to take notes on instructional design.

*Level of difficulty.* Students’ performance data were submitted to a Rasch analysis using the program Quest (Adams & Khoo, 1994) to ensure equivalent difficulty levels across tasks. The Rasch model helps in the construction of objective, additive scales. It transforms data into abstract, equal-interval scales. The model provides researchers with approximations of measures that are useful in helping them understand the processes underlying the reason why people and items behave in particular ways. Essentially, the
Rasch model examines whether the performance data were consistent with the seven measurement criteria Wright and Masters (1981) identified. The model incorporates an algorithm that shows the probabilities of item performances when one construct is held to underlie the specific line of inquiry. The Rasch model performs a logarithmic transformation on the item difficulty and person ability data to convert the ordinal data into interval data. These transformations represent person ability and item difficulty estimates detected in the data. If the data adheres to the Rasch model of probabilities, then it is considered unidimensional.

The Rasch model orders items along a logit scale that is based on the log odds of individuals responding to the items. The items are ordered from “easier items” to “harder items”. Items at the easiest end of the scale are given negative logits and those at the most difficult end of the scale are given positive logits. This represents the difficulty levels of the items. The logit scale is an interval scale and so any distances among items on the scale have equal values. Rasch sets the mean of item difficulty at zero.

Rasch also estimates person ability along a logit scale in relation to item difficulty (e.g., the more positive the value, the higher the person's ability on the test). Thus, items that are at the easiest end of the scale are answered correctly by most persons and those at the most difficult end of the scale are answered by persons with the ability to answer at that difficulty level. Rasch plots persons along the scale so that each person has a 50% chance of a correct response on an item located at the same point on the scale. This value is called a threshold value. The mean person ability estimate should be zero (equal to the zero mean of item difficulty) for the test to be considered a well-matched test to the sample. Rasch relates person ability estimates to item difficulty estimates (e.g. the more
negative the item difficulty value is for a person, the lower the ability of that person on
the test). The Rasch model ensures that the performance abilities of persons taking a test
is independent of the test items and that the difficulty level on the scale of the test items is
independent of persons used to calibrate the scale and the test items.

The Rasch model examines the construct validity of the test. Hence, it provides fit
statistics to assess whether items and persons adhere to the underlying construct of
measurement. Rasch reports unstandardized and standardized infit and outfit statistics.
The unstandardized fit statistics are reported as mean squares and the standardized are
reported as $t$ statistics (Bond & Fox, 2001). These statistics are not reported here for lack
of relevance to the current study.

Rasch outputs of person ability and item difficulty estimates can be used to generate
test-equating analyses. Test equating is a term used to explain levels of comparisons
among tests. It compares tests that measure the same construct and have been designed to
be equivalent. There are different types of test equating methods conducted using the
Rasch model. For the current study, the common person equating method was used to
ensure equivalent person ability estimates and consequently, equivalent item difficulty
levels across tasks. This method was used because for this study, persons were the same
but tests did not share common items. In a common person-equating scenario, the same
persons take different tests, which have the same specifications but do not share common
items (Yu & Popp, 2005). According to Yu and Popp (2005), “Even though no item in
two tests are the same or look alike, the question of the commensurability between tests
could still be directly answered by checking the strength of correlation between two sets
of ability estimates yielded from the two tests” (p. 2). Each student’s ability estimate on
both tests are plotted onto a scatterplot. If all points fall along a 45 degree diagonal line which could be drawn through the scatterplot representing the group means of axes x and y, person ability estimates and hence item difficulty estimates are considered perfectly identical (error free). Each person’s Rasch error estimate is used to construct paired control lines for a 95% confidence band to determine whether or not the distribution of plotted person ability estimates is close enough to the modeled relationship diagonal line for the two tests to be considered sufficiently identical (Bond & Fox, 2001). The scatterplot will have three pairs of variables plotted: 1) person ability estimates for the two tests, 2) lower bound values and upper bound values (computed using the error estimates), and the pair of bound values reversing axes, referred in this study as a1 versus b1, and 3) upper bound values and lower bound values referred to here as a2 versus b2 (Yu & Popp, 2005). Bond and Fox (2001) stated, “Simple visual inspection will reveal whether enough of the points (95% or more of them) lie within the control band.” (p.57).

For the current study, only the two exams and two assignments concurrently were equated since they shared similar tables of specifications. Comparisons among exams and assignments were conducted by assessing personal ability means. Person ability estimates relate to item difficulty levels (Bond & Fox, 2001).

For the current study, the dichotomous and partial credit models were used for the exams and assignments, respectively (see Bond & Fox, 2001). For the dichotomous model, the exams were coded as follows: 0 for incorrect and 1 for correct. In regards to the partial credit model, the ranges were as follows: needs work, 0 – 6 with a code of 0, acceptable, 7 – 8 with a code of 1 and exemplary, 9 – 10, with a code of 2.
Procedure

Within the first three weeks of school, students completed the PALS about the general context of their educational psychology class. The data collected for this phase of the study is referred to as “the general” context. Students also filled out a demographic questionnaire. Just before students completed their first assignment, they were asked to fill out the PALS but the instructions and items were changed to reflect the assignment as the context. This process was repeated for each subsequent assignment and exam. Students’ performance data was collected after each assignment and exam and the performance data were submitted to a Rasch analysis to ensure equivalent difficulty levels across tasks. During the course of the study, one classroom observation was conducted to assess overall instructional design. At this time, the instructor was asked to complete the teacher version of the PALS.

Study 2

The aim of the second study was to replicate the findings of study 1 but with slightly different tasks (assignments across the two classes differed). As in Study 1, I predicted a change in goal orientation across tasks.

Participants

Thirty students enrolled in a lecture-based introductory educational psychology class at a large southwestern university participated in the second experiment in return for extra credit toward their final course grade. Twenty-three were females and seven were males. The combined mean age of the students was 22.47 years old (SD = 5.44) with a
males. The combined mean age of the students was 22.47 years old (SD = 5.44) with a range of 19 to 43 years. The mean self-reported GPA was 3.19 (SD = .46, N = 30). Approximately eighty percent were education majors. Students were participating in a multifaceted study and responded to another questionnaire about study strategies and self-efficacy that is not relevant to the research question examined here. The instructor was a graduate student, teaching undergraduate level courses for approximately three semesters. Students' performances were based on the standard university percentage scale (e.g., 90 – 100% is an A). Before conducting this research, approval was obtained on December 16, 2005 by the University of Nevada, Las Vegas Institutional Review Board. All participants received and signed a university institutional review board approved consent form. Consent forms are presented in Appendix I.

Measures

Demographic Questionnaire. The demographic questionnaire from Study 1 was used to collect measures of students’ age, major, minor, etcetera. The demographic questionnaire is presented in Appendix II.

Goal Orientation. The PALS (Midgley et al., 2000) used in Study 1 was used to assess students’ goal orientations before each assignment and exam. Participants’ responses on the items for each goal orientation were also averaged to form the respective mastery, performance-approach and performance-avoidance goal orientation subscales for the five waves of data collection. As in Study 1, the teacher version of the PALS (Midgley et al., 2000) was used to examine the instructor’s goal-related approaches to
instruction. The instructor's responses on the items for each goal structure were also averaged to form the mastery and performance classroom goal structure subscales.

*Performance.* During the course of the study, students were assigned four tasks: two exams and two assignments. Exams were multiple choice formats completed in class for approximately 1 hour and 45 minutes each. Exams 1 and 2 comprised 40 and 38 questions, respectively. For assignment one, students were required to do a 10-minute group presentation on Erikson's developmental stages. There were eight groups, each representing a different stage. The groups were given approximately one week to prepare for presentations. The groups were instructed to address six issues which all required subjective (essay format) responses. Students were instructed to present their ideas to the class in any form (e.g., PowerPoint, handouts, skits, use of the whiteboard, etcetera). Students' grades were from classmates and the instructor. Students were given a rubric as a guide to grading presentations. For assignment two, students were given a scenario and were instructed to write a short essay on that scenario using a concept covered in class and in the text. Students were provided five specific areas that should be addressed in the paper. The instructor calculated performance by summing students' points for correct responses. By the end of the study, each participant had a total of four performance scores.

*Classroom observation.* The classroom observation worksheet and procedure used in Study 1 was used in this study. The classroom observation checklist is presented in Appendix II.

*Level of difficulty.* As in Study 1, students' performance data were submitted to a Rasch analysis using the program Quest (Adams & Khoo, 1994) to ensure equivalent
difficulty levels across tasks. As in Study 1, the dichotomous and partial credit models were used for the exams and assignments, respectively (see Bond & Fox, 2001). Common person equating was used to assess performance scores between exam 1 and exam 2 and assignment 1 and assignment 2. Comparisons among the exams and assignments were conducted by comparing the respective person ability means. For the dichotomous model, the exams were coded as follows: 0 for incorrect and 1 for correct. For the partial credit model, the ranges were as follows: needs improvement, 0 – 9 with a code of 0, acceptable, 10 -15 with a code of 1, good, 16 – 20, with a code of 2 and excellent, 21 – 25, with a code of 3.

Procedure

As in Study 1, within the first three weeks of school, students completed the PALS about the general context of their educational psychology class. The data collected for this phase of the study was also referred to as “the general context.” Students also filled out a demographic questionnaire. Just before students completed their first assignment, they were asked to fill out the PALS but the instructions and items were changed to reflect the assignment as the context. This process was repeated for each subsequent assignment and exam. Students’ performance data was collected after each assignment and exam and the performance data was submitted to a Rasch analysis to ensure equivalent difficulty levels across tasks. During the course of the study, one classroom observation was conducted to examine overall instructional design. At this time, the instructor was asked to complete the teacher version of the PALS.
CHAPTER 4

FINDINGS OF THE STUDY

Study 1

*General Data Analysis*

Descriptive statistics were run on all variables relevant to the current study. The data were examined for normality. All variables were examined for accuracy of input, out-of-range values, reasonable means and standard deviations, normality, and univariate outliers. All variables appeared to have appropriate values. Table 1 provides skewness and kurtosis values for relevant variables. The assumption of normality was met. According to Kline (1998), normality is reached with skewness and kurtosis absolute values of 3.0 and 8.0, respectively. All skewness and kurtosis values fall within these acceptable ranges indicating that all variables were normally distributed.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.51</td>
<td>4.21</td>
</tr>
<tr>
<td>Sex</td>
<td>1.07</td>
<td>-.92</td>
</tr>
<tr>
<td>GPA</td>
<td>-.30</td>
<td>-.20</td>
</tr>
<tr>
<td>General Context Mastery</td>
<td>-.81</td>
<td>-.13</td>
</tr>
<tr>
<td>General Context Performance Approach</td>
<td>.31</td>
<td>.33</td>
</tr>
<tr>
<td>General Context Performance Avoidance</td>
<td>.07</td>
<td>-.21</td>
</tr>
<tr>
<td>Assignment 1 Mastery</td>
<td>-.50</td>
<td>-.23</td>
</tr>
<tr>
<td>Assignment 1 Performance Approach</td>
<td>.25</td>
<td>-.71</td>
</tr>
<tr>
<td>Assignment 1 Performance Avoidance</td>
<td>.16</td>
<td>-.18</td>
</tr>
<tr>
<td>Exam 1 Mastery</td>
<td>.24</td>
<td>.14</td>
</tr>
<tr>
<td>Exam 1 Performance Approach</td>
<td>.06</td>
<td>-.71</td>
</tr>
<tr>
<td>Exam 1 Performance Avoidance</td>
<td>-.60</td>
<td>.04</td>
</tr>
<tr>
<td>Assignment 2 Mastery</td>
<td>-.40</td>
<td>-.25</td>
</tr>
<tr>
<td>Assignment 2 Performance Approach</td>
<td>.22</td>
<td>-.78</td>
</tr>
<tr>
<td>Assignment 2 Performance Avoidance</td>
<td>.14</td>
<td>-.89</td>
</tr>
<tr>
<td>Exam 2 Mastery</td>
<td>-.62</td>
<td>.40</td>
</tr>
<tr>
<td>Exam 2 Performance Approach</td>
<td>.40</td>
<td>-.31</td>
</tr>
<tr>
<td>Exam 2 Performance Avoidance</td>
<td>.27</td>
<td>-.68</td>
</tr>
</tbody>
</table>
Rasch Test-Equating Analysis

Common person equating analyses were conducted to assess and ensure equivalent difficulty levels across tasks. Exam 1 was equated with exam 2 (share same table of specifications) and assignment 1 was equated with assignment 2 (share same table of specifications). Comparisons among assignments and exams were performed by comparing their person ability means. These analyses were done because test equating could not be conducted on these tasks since they had differing tables of specifications. Table 2 provides a summary of the Rasch item difficulty descriptive statistics for Study 1. Table 3 provides traditional descriptives for each task. Figures 1 and 2 show the scatterplot of person equating between exams 1 and 2 and assignments 1 and 2, respectively.

Bond and Fox (2001) suggested that, “if the two tests were both measuring the same ability and were of the same difficulty, at least 95% of the plotted points would lie within the control lines” (p.57). The scatterplots have three pairs of variables plotted: 1) person ability estimates for the two tests, 2) lower bound values and upper bound values (computed using the error estimates), and the pair of bound values reversing axes, referred to here in this study as a1 versus b1, and 3) upper bound values and lower bound values referred to here as a2 versus b2 (Yu & Popp, 2005). Through simple visual inspection (see Bond & Fox, 2001), the scatterplots show that for both exams and assignments, about 95% of the points are located inside of the confidence band. Thus, I can conclude that assignments 1 and 2 and exams 1 and 2 are sufficiently identical within the limits of measurement error. Given that test equating could not be conducted between exams and assignments because of differing tables of specifications, person ability
estimates were analyzed to compare and ensure equivalent task difficulty levels. These analyses compared the standardized ease of taking the tests. According to Bond and Fox (2001), a well-matched test would have an ability mean of zero, an easy test would have a person ability mean greater than zero and a tough test would have a negative person ability mean. The person ability means of 2.19 for assignment 1 and .59 for exam 1 suggest that students found both tasks easy. Similarly, the person ability mean of 2.07 for assignment 2 suggests that students found both assignment 2 and exam 1 easy. Likewise, exam 2 person ability mean of .78 suggests that students found exam 2 and assignment 1 easy. Students also found exam 2 (Rasch Mean = .78) and assignment 2 (Rasch Mean = 2.07) easy. These person ability estimates indicate that the assignments and exams all fall within the easy framework. These estimates coupled with the common person equating results suggest that tasks difficulty levels would not change the goal orientation framework.

<table>
<thead>
<tr>
<th>Task</th>
<th>Rasch Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Assignment 1</td>
<td>2.19</td>
</tr>
<tr>
<td>Exam 1</td>
<td>.59</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>2.07</td>
</tr>
<tr>
<td>Exam 2</td>
<td>.78</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Table 3 Descriptive Statistics for Performance Scores: Study 1

<table>
<thead>
<tr>
<th>Task</th>
<th>M</th>
<th>%</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>18.50</td>
<td>92.50</td>
<td>1.78</td>
</tr>
<tr>
<td>Exam 1</td>
<td>39.03</td>
<td>70.96</td>
<td>6.38</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>18.09</td>
<td>90.45</td>
<td>1.83</td>
</tr>
<tr>
<td>Exam 2</td>
<td>36.34</td>
<td>63.75</td>
<td>7.42</td>
</tr>
</tbody>
</table>

Note: Ns varied across tasks. N = 32, N = 32, N = 28, N = 32 for assignment 1, exam 1, assignment 2 and exam 2, respectively. Total possible points were 20, 55, 20, and 57 for assignment 1, exam 1, assignment 2, and exam 2, respectively.

Figure 1 Person Equating Scatterplot between Exams 1 and 2: Study 1

Note: N = 30. a1 = lower bound for exam 1, b1 = upper bound values for exam 2, a2 = upper bound for exam 2, and b2 = lower bound for exam 2.
Classroom Goal Structure

The next set of analyses was conducted to assess the instructor's goal-related instructional technique. The mean (3.75) for mastery approach classroom goal structure was greater than the scale midpoint and mean (1.0) for the performance approach classroom goal structure. Thus, the instructor clearly adopted a mastery-oriented approach to teaching.
Overall Classroom Design

To assess instructor's overall classroom design, a classroom observation was conducted. The lesson covered the last section on gender differences and biases and began with the chapter on learning, specifically behaviorism. In all, five facets of instructional design (content organization, content knowledge, content presentation, instructor-student interaction, and goal-oriented instructional techniques) were observed, recorded, and analyzed. An analysis of the data revealed that the instructor effectively organized and presented the lesson, demonstrated good knowledge of the subject matter, interacted efficiently with students, and his goal related approaches to teaching paralleled his self-reported goal structure. More specifically, analysis of the data revealed the following five findings:

Content Organization

The instructor provided the class with the objectives and an outline for the session. In addition, he related the lesson to previous lessons, specifically past activities. For example, during the lesson, on gender bias, he stated, "This comes back to thinking about gender bias and it reminds me of that activity. Remember that activity I gave you on students with a mental challenge? It was all filled with use of that old school references. Same sought of thing with gender bias." In all, the instructor related the lesson to past activities twice. Between class segments, the instructor made transitional statements. For example, when getting into gender differences, the instructor paused for approximately six seconds and then stated, "When we turn to the differences between males and females according to research that has been done, Woolfolk touches on them briefly." The lesson progressed in a logical sequence as laid out in the outline for the class session, he
provided to students at the beginning of class. Lastly, there were four instances of the instructor responding to students’ problems and questions raised during lecture.

Content Knowledge

The instructor’s knowledge of the subject matter was clear. Specifically, during the lesson on behaviorism, the instructor identified the authorities and perspectives in the field and explained the history of and related the relevance of behaviorism to education.

Presentation

The instructor presented the ideas clearly such that he used examples to make points clear and related the lesson to real life events and experiences. For example, to explain the concept of classical conditioning, he provided students with six separate examples to explain the concept. Moreover, the teacher provided two real life personal experiences of classical conditioning. The instructor also encouraged students to think of real life experiences of the concept. For example, one time during the lesson, he asked for personal examples of human sought of classical conditioning. He also related ideas to their future career, teaching. For example, once during the lecture on gender bias, he stated, “Again, the implication for you is that you’ve got to be aware of it. How do you interact with your students during your class?” The teacher effectively used the classroom space by pacing around the classroom occasionally, all the while maintaining eye contact with students. In addition, he used a PowerPoint presentation with bullet points of concepts to reinforce the ideas presented.
Instructor – Student Interaction

Four students presented their ideas during the course of the class and the instructor responded and accepted their opinions with respect. For example, during the lecture, one student suggested that the environment plays a part in gender differences. The teacher responded, “Thanks for bringing that.” The class atmosphere was warm and open, such that the instructor incorporated seven instances of humor into the lesson. The instructor communicated interest in student learning and so periodically asked questions to monitor students’ understanding of concepts and encouraged questions and discussions from students. For example, he occasionally asked, “Does everybody understand? Do you have any questions?” During the lecture, students were attentive and took notes intently. In addition, the instructor probed students when their answers were incorrect. For example, once while covering classical conditioning; the teacher asked students to provide examples of neutral stimuli that can be paired with food and to explain the process of conditioning using the examples. One student responded with an incomplete response to the process so the teacher probed the student, “so what eventually happens?” There were six instances of positive consequences of praise or encouragement when students provided ideas, comments or suggestions to the class. In all six instances, the instructor called students by their names. The instructor also accepted and used students’ ideas or suggestions during his lecture. For example, one student explained that contiguity reminds her of assimilation and the instructor continually used that student’s idea when he explained the concept of contiguity. No instances of negative consequences were observed.
Classroom Goal Structure

There were six instances of verbal feedback given to students who correctly answered questions, ideas or suggestions. For example, when one student answered a question correctly, the instructor exclaimed, “Okay!” The instructor provided one activity during the course of a lesson where students were separated into groups to answer and present answers to end of lesson questions. The instructor did not promote a competitive atmosphere. The observed classroom goal structure suggested that the teacher self-reported mastery goal structure paralleled his actual goal-related approaches to teaching.

Changes in Goal Orientation as a Function of Context

I predicted that students’ level of goal orientation would change over time as a function of task context. To evaluate this prediction, I conducted a 3 (goal orientation subscale) x 4 (time) doubly multivariate repeated measures analysis of variance (ANOVA). Descriptive statistics and alpha internal consistency reliability coefficients for each goal orientation subscale at five time points (start of course, before the first assignment, the midterm, the second assignment and the final exam) are presented in Table 4. Test-retest reliabilities for each goal orientation subscale including the start of the course and each subsequent retest is presented in Table 5. Means across contexts were compared to examine whether context influenced the goal framework. Figure 1 shows means for each goal orientation subscale across time. The correlations among subscales are presented in Table 6.

Sphericity for time and goal orientation main effects and the time x goal orientation were violated (greenhouse geisser = .61, .59, and .48, respectively) therefore Wilks’
Lambda was used as the multivariate test. A significant main effect for goal orientation, $F(2, 25) = 24.60, p < .05, \eta^2 = .66$ was detected. The main effect of time, $F(4, 23) = 1.27, p > .05$ was not significant. Results indicated that the interaction between time and goal orientation was statistically significant, $F(8, 19) = 9.16, p < .05, \eta^2 = .79$. Cohen (2001) suggests that if there is a significant interaction in an ANOVA, especially if it is a disordinal interaction, it is not a good idea to perform post hoc analyses on main effects. Thus, simple effects follow-up tests were conducted for the significant interaction between time and goal orientation. Keppel and Wickens (2004) suggest that both sets of simple effects do not have to be conducted since they represent partially redundant results. They suggested that simple effects should be done on the factor with the greater number of levels. Thus, posthoc analyses were done for each goal orientation at each time. Posthoc one way analyses of variance (with Tukey HSD follow-up) revealed that at general context, mastery goal orientation (Mean = 4.34) was statistically greater than performance approach orientation (Mean = 2.69, $p < .05$) and performance avoidance goal orientation (Mean = 2.68, $p < .05$) and performance approach goal orientation was not statistically greater than performance avoidance goal orientation ($p > .05$). For assignment one, mastery goal orientation (Mean = 4.24) was statistically greater than performance approach goal orientation (Mean = 2.80, $p < .05$) but mastery goal orientation was not statistically greater than performance avoidance goal orientation (Mean = 2.96, $p > .05$). Performance approach goal orientation was not statistically smaller than performance avoidance goal orientation ($p > .05$). For exam 1, mastery goal orientation (Mean = 3.30) was not statistically greater than performance approach goal orientation (Mean = 3.13, $p > .05$) and mastery goal orientation was not statistically
smaller than performance avoidance goal orientation (Mean = 3.58, p > .05).
Performance approach goal orientation was not statistically smaller than performance
avoidance goal orientation (p > .05). For assignment 2, mastery goal orientation (Mean =
4.16) was statistically greater than performance approach goal orientation (Mean = 2.70,
p < .05) but mastery goal orientation was not statistically greater than performance
avoidance goal orientation (Mean = 2.87, p > .05). Performance approach goal
orientation was not significantly smaller than performance avoidance goal orientation (p
> .05). For exam 2, mastery goal orientation (Mean = 4.21) was statistically greater than
performance approach goal orientation (Mean = 2.85, p < .05) but mastery goal
orientation was not statistically greater than performance avoidance goal orientation
(Mean = 3.01, p > .05). Performance approach goal orientation was not statistically
smaller than performance avoidance goal orientation (p > .05). The statistically detectable
interaction suggests that the outcomes of goal orientations were not identical at each level
of the different tasks. Thus, the type of tasks changes the goal orientation students adopt.
Table 4  Descriptive Statistics and Cronbach αs for Goal Orientations: Study 1

| Scale                     | Time 1 General Context M | SD   | α   | Time 2 Assignment 1 M | SD   | α   | Time 3 Exam 1 M | SD   | α   | Time 4 Assignment 2 M | SD   | α   | Time 5 Exam 2 M | SD   | α   | Overall Orientation Level M |
|---------------------------|--------------------------|------|-----|------------------------|------|-----|-----------------|------|-----|------------------------|------|-----|-----------------|------|-----|-----------------|------|-----|
| Mastery                   | 4.27                     | .71  | .92 | 4.16                   | .62  | .87 | 3.28            | .71  | .67 | 4.03                   | .72  | .93 | 4.13            | .71  | .92 | 3.97            |
| Performance Approach      | 2.68                     | .84  | .79 | 2.68                   | 1.12 | .93 | 3.12            | .81  | .80 | 2.67                   | 1.19 | .95 | 2.80            | 1.10 | .93 | 2.79            |
| Performance Avoidance     | 2.73                     | .95  | .76 | 2.90                   | .97  | .47 | 3.52            | .60  | .47 | 2.84                   | 1.17 | .91 | 2.99            | 1.15 | .91 | 3.00            |
| Overall Goal Level (across scale) | 3.23                     | 3.25 | 3.06 | 3.18                   | 3.07 |    |                 |      |     |                         |      |     |                 |      |     |                 |

Note: Ns varied across time. N = 33, N = 32, N = 31, N = 31, N = 28 for times 1, 2, 3, 4, and 5, respectively.
### Table 5 Test-Retest Reliability Coefficients for Goal Orientations: Study 1

<table>
<thead>
<tr>
<th>Goal Orientation</th>
<th>Time 1 &amp; Time 2</th>
<th>Time 1 &amp; Time 3</th>
<th>Time 1 &amp; Time 4</th>
<th>Time 1 &amp; Time 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery</td>
<td>.59**</td>
<td>.34</td>
<td>.51**</td>
<td>.51**</td>
</tr>
<tr>
<td>Performance Approach</td>
<td>.65**</td>
<td>.60**</td>
<td>.43*</td>
<td>.49**</td>
</tr>
<tr>
<td>Performance Avoidance</td>
<td>.76**</td>
<td>.42*</td>
<td>.48**</td>
<td>.45*</td>
</tr>
</tbody>
</table>

Note: **. Correlation is significant at the .01 level. *. Correlation is significant at the .05 level.

### Figure 3 Stability of Goal Orientation Across Time: Study 1

![Graph showing stability of goal orientation across time](https://via.placeholder.com/150)

- **Mastery** — —
- **Performance Approach** —
- **Performance Avoidance** —

53

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Table 6. Correlations Between Each Goal Orientation and Performance Across Tasks

<table>
<thead>
<tr>
<th>Assignment 1</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Master</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.30</td>
<td>.88*</td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.30</td>
<td>.05</td>
<td>-.03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exam 1</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mastery</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.64*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.62*</td>
<td>.73*</td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>-.23</td>
<td>-.14</td>
<td>-.23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assignment 2</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mastery</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach</td>
<td></td>
<td>-.04</td>
<td>.90*</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
<td>-.31</td>
<td>-.39*</td>
</tr>
</tbody>
</table>
Study 2

*General Data Analysis*

As in Study 1, descriptive statistics were run on all variables relevant to the current study. The data were examined for normality. All variables were examined for accuracy of input, out-of-range values, reasonable means and standard deviations, normality, and univariate outliers. All variables appeared to have appropriate values. Table 7 provides skewness and kurtosis values for relevant variables. The assumption of normality was met. According to Kline (1998), normality is reached with skewness and kurtosis absolute values of 3.0 and 8.0, respectively. All skewness and kurtosis values fall within these acceptable ranges indicating that all variables were normally distributed.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>2.46</td>
<td>6.40</td>
</tr>
<tr>
<td>Sex</td>
<td>1.33</td>
<td>-.26</td>
</tr>
<tr>
<td>GPA</td>
<td>-.30</td>
<td>-.01</td>
</tr>
<tr>
<td>General Context Mastery</td>
<td>-.92</td>
<td>.33</td>
</tr>
<tr>
<td>General Context Performance Approach</td>
<td>.35</td>
<td>-.18</td>
</tr>
<tr>
<td>General Context Performance Avoidance</td>
<td>.93</td>
<td>.43</td>
</tr>
<tr>
<td>Assignment 1 Mastery</td>
<td>-1.58</td>
<td>2.86</td>
</tr>
<tr>
<td>Assignment 1 Performance Approach</td>
<td>.32</td>
<td>-.75</td>
</tr>
<tr>
<td>Assignment 1 Performance Avoidance</td>
<td>.42</td>
<td>.03</td>
</tr>
<tr>
<td>Exam 1 Mastery</td>
<td>.56</td>
<td>.12</td>
</tr>
<tr>
<td>Exam 1 Performance Approach</td>
<td>.33</td>
<td>-.17</td>
</tr>
<tr>
<td>Exam 1 Performance Avoidance</td>
<td>-.49</td>
<td>1.30</td>
</tr>
<tr>
<td>Assignment 2 Mastery</td>
<td>.50</td>
<td>-1.04</td>
</tr>
<tr>
<td>Assignment 2 Performance Approach</td>
<td>.54</td>
<td>.49</td>
</tr>
<tr>
<td>Assignment 2 Performance Avoidance</td>
<td>-.36</td>
<td>.36</td>
</tr>
<tr>
<td>Exam 2 Mastery</td>
<td>-1.21</td>
<td>2.50</td>
</tr>
<tr>
<td>Exam 2 Performance Approach</td>
<td>.54</td>
<td>-.39</td>
</tr>
<tr>
<td>Exam 2 Performance Avoidance</td>
<td>.46</td>
<td>-.46</td>
</tr>
</tbody>
</table>
Rasch Test Equating Analysis

As in Study 1, common person equating analyses were conducted to assess and ensure equivalent difficulty levels across tasks. Exam 1 was equated with exam 2 (share same tables of specifications) and assignment 1 was equated with assignment 2 (share same tables of specifications). Comparisons among assignments and exams were performed by comparing their person ability means. These analyses were done because test equating could not be conducted on these tasks since they had differing tables of specifications. Table 6 provides a summary of the Rasch item difficulty descriptive statistics for Study 2. Table 7 provides traditional descriptives for each task. Figures 4 and 5 show the scatterplot of person equating between exams 1 and 2 and assignments 1 and 2, respectively.

Bond and Fox (2001) suggested that, “if the two tests were both measuring the same ability and were of the same difficulty, at least 95% of the plotted points would lie within the control lines” (p.57). As in Study 1, the scatterplots have three pairs of variables overlaid: 1) person ability estimates for the two tests, 2) lower bound values and upper bond values (computed using the error estimates), and the pair of bound values reversing axes, referred to here in this study as a1 versus b1, and 3) upper bound values and lower bound values referred to here as a2 versus b2 (Yu & Popp, 2005). Through simple visual inspection (see Bond & Fox, 2001), as in Study 1, the scatterplots show that for both the exams and assignments, about 95% of the points are located inside of the confidence band. Thus, I can conclude that assignments 1 and 2 and exams 1 and 2 are sufficiently identical within the limits of measurement error. Given that test equating could not be
conducted between exams and assignments because of differing tables of specifications, person ability estimates were analyzed to compare task difficulty levels. These analyses compared the standardized ease of taking the tests. According to Bond and Fox (2001), a well-matched test would have an ability mean of zero, an easy test would have a person ability mean greater than zero and a tough test would have a negative person ability mean. The person ability means of 2.29 for assignment 1 and 1.03 for exam 1 suggest that students found both tasks easy. Similarly, the person ability mean of .90 for assignment 2 suggests that students found both assignment 2 and exam 1 easy. Likewise, exam 2 person ability mean of 1.57 suggests that students found exam 2 and assignment 1 easy. Also students found exam 2 (Rasch Mean = 1.57) and assignment 2 (Rasch Mean = .90) easy. These person ability estimates indicate that the assignments and exams all fall within the easy framework. These estimates coupled with the common person equating results suggest that tasks difficulty levels would not change the goal orientation framework.

<table>
<thead>
<tr>
<th>Task</th>
<th>Rasch Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>2.29 .63</td>
</tr>
<tr>
<td>Exam 1</td>
<td>1.03 1.01</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>.90 1.57</td>
</tr>
<tr>
<td>Exam 2</td>
<td>1.57 .81</td>
</tr>
</tbody>
</table>

Table 8 Rasch Person Ability Descriptive Statistics: Study 2

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Table 9  Descriptive Statistics for Performance Scores: Study 2

<table>
<thead>
<tr>
<th>Task</th>
<th>M</th>
<th>%</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>45.24</td>
<td>90.48</td>
<td>3.31</td>
</tr>
<tr>
<td>Exam 1</td>
<td>33.43</td>
<td>83.58</td>
<td>4.83</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>16.07</td>
<td>64.28</td>
<td>7.29</td>
</tr>
<tr>
<td>Exam 2</td>
<td>28.84</td>
<td>75.89</td>
<td>3.78</td>
</tr>
</tbody>
</table>

Note: Ns varied across tasks. N = 29, N = 30, N = 27, N = 29 for assignment 1, exam 1, assignment 2 and exam 2, respectively. Total possible points were 50, 40, 25, and 38 for assignment 1, exam 1, assignment 2, and exam 2, respectively.

Figure 4  Person Equating Scatterplot between Exams 1 and 2: Study 2

Note: N = 26. a1 = lower bound for exam 1, b1 = upper bound values for exam 2, a2 = upper bound for exam 2, and b2 = lower bound for exam 2.
Figure 5  Person Equating Scatterplot between Assignments 1 and 2: Study 2

Note: N= 25. \(a_1\) = lower bound for assignment 1, \(b_1\) = upper bound values for assignment 2, \(a_2\) = upper bound for assignment 2, and \(b_2\) = lower bound for assignment 2.

Classroom Goal Structure

As in Study 1, the next set of analyses was conducted to assess the instructor's goal-related instructional technique. The mean (4.00) for mastery approach classroom goal structure was greater than the scale midpoint and mean (2.2) for the performance approach classroom goal structure. As in Study 1, the instructor clearly adopted a mastery-oriented approach to teaching.
Overall Classroom Design

As in Study 1, to assess the instructor's overall classroom design, a classroom observation was conducted. Similar to Study 1, the lesson was based on behaviorism, specifically, operant conditioning. In all, five facets of instructional designs (content organization, content knowledge, content presentation, instructor-student interaction, and goal-oriented instructional techniques) were observed, recorded, and analyzed. Fairly similar patterns of instructional design in Study 1 were observed in this study. An analysis of the data revealed that the instructor effectively organized and presented the lesson, demonstrated good knowledge of the subject matter, interacted efficiently with students, and her goal related approaches to teaching paralleled her self-reported goal structure. More specifically, analysis of the data revealed the following five findings:

Content Organization

The instructor provided the class with the objectives for the session but unlike Study 1, did not provide an outline for the session. The instructor related the lesson to previous lessons. For example, during the lesson on Thorndike's law of effect the instructor stated, "If you remember, uhm, a few classes ago, I told you about the Thorndike law of effect. Everybody needs to have that in their notes" There were two instances of relating the lesson to previous lessons. Between class segments, the instructor made transitional statements, like, “That takes me right into the next topic” and “So we are talking about.....” Consequently, the lesson progressed in a logical sequence. Lastly, there were five instances of the instructor responding to students' problems and questions raised during lecture.
Content Knowledge

The instructor’s knowledge of the subject matter was clear. Specifically, during the lesson on operant conditioning, the instructor provided extensive explanation with real world examples of the theory to the class (12 examples) and related the relevance of behaviorism to education. For example, the instructor stated “So as future teachers and you think about okay well, we don’t use behaviorism a lot in the classroom but there are some instances when we need it.” The instructor then went on to lecture on these instances.

Presentation

The instructor presented the ideas clearly such that she used examples to make points clear and related the lesson to real life events and experiences, specifically teaching. For example, to explain the concept of operant conditioning, she provided students with twelve separate classroom examples to explain the concept. The instructor also encouraged students to think of real life experiences of concepts. For example, in relating behaviorism to the classroom, she asked students to provide examples of how they would go about implementing reinforcers in a real life classroom. As a result, the instructor effectively related ideas to most of the students’ future careers, teaching. The instructor effectively used the classroom space by pacing around the classroom occasionally, all the while maintaining eye contact with students. In addition, the instructor used the white board to reinforce the ideas presented.
Instructor – Student Interaction

One student presented his idea during the course of the class and the instructor responded and accepted his opinion with respect. For example, during the lecture, the student suggested that trying out a reinforcer on someone else is like family feud. The teacher responded, “There you go! See that’s motivating!” The class atmosphere was warm and open, such that the instructor incorporated two instances of humor into the lesson. The instructor communicated interest in student learning and so periodically asked questions to monitor students’ understanding of concepts and encouraged questions and discussions from students. For example, she occasionally asked, “Now everybody understands that? Does everybody get those concepts? Okay?” During the lecture, students were attentive and took notes intently. The instructor probed students when their answers were incorrect. For example, once while covering potency the teacher asked one student to provide a definition of potency. The student responded incompletely so the teacher probed the student, “so what does that mean?” There were four instances of positive consequences of praise or encouragement when students provided ideas, comments or suggestions to the class. Specifically, the instructor, shook her head in approval and said “aha, aha.” In all instances, the instructor called students by their names. Unlike in Study 1, the instructor did not use students’ ideas or suggestions during the lecture.

Classroom Goal Structure

There were four instances of feedback given to students who correctly answered questions, ideas or suggestions. For example, when one student answered a question correctly, the instructor exclaimed, “Right!” The instructor provided one activity during
the course of the lesson where students were separated into groups to prepare for presentations on operant conditioning for the next class session. The instructor did not promote a competitive atmosphere. The observed goal structure suggested that teacher self-reported mastery goal structure paralleled her actual goal-related approaches to teaching.

Changes in Goal Orientation as a Function of Context

I predicted that students' levels of goal orientation would change over time as a function of task context. To evaluate this prediction, I conducted a 3 (goal orientation subscale) x 4 (time) doubly multivariate repeated measures analysis of variance (ANOVA). Descriptive statistics and alpha internal consistency reliability coefficients for each goal orientation subscale at five time points (start of course, before the first assignment, the midterm, the second assignment and the final exam) are presented in Table 10. Test-retest reliabilities for each goal orientation subscale including the start of the course and each subsequent retest is presented in Table 11. Means across contexts were compared to examine whether context influenced the goal framework. Figure 4 shows means for each goal orientation subscale across time. The correlations among subscales are presented in Table 12.

Sphericity for goals main effect and the time x goals were violated (greenhouse geisser = .57 and .46, respectively) therefore Wilks' Lambda was used as the multivariate tests. A significant main effect for goal orientation, F (2, 25) = 25.833, p < .05, η² = .67 was detected. However, unlike in Study 1, the main effect of time, F (4, 104) = 1.27, p < .05, η² = .12 was significant. Results indicated that the interaction between time and goal
orientation was statistically significant, \( F(8, 19) = 9.72, p < .01, \eta^2 = .80 \). Cohen (2001) suggests that if there is a significant interaction in an ANOVA, especially if the interaction is disordinal, it is not a good idea to perform post hoc analyses on main effects. Thus, simple effects follow-up tests were conducted for the significant interaction between time and goal orientation. Keppel and Wickens (2004) suggest that both sets of simple effects do not have to be conducted since they represent partially redundant results. They suggested that simple effects should be done on the factor with the greater number of levels. Thus, posthoc one-way analyses of variance (with Tukey HSD follow-up) were conducted for each goal orientation at each time. Results revealed that, for general context, mastery goal orientation (Mean = 4.36) was statistically greater than performance approach goal orientation (Mean = 2.64, \( p < .05 \)) and performance avoidance goal orientation (Mean = 2.74, \( p < .05 \)) and performance approach goal orientation was not statistically smaller than performance avoidance goal orientation (\( p > .05 \)). For assignment one, mastery goal orientation (Mean = 4.18) was not statistically greater than performance approach goal orientation (Mean = 2.69, \( p > .05 \)) and mastery goal orientation was not statistically greater than performance avoidance goal orientation (Mean = 2.89, \( p > .05 \)). Performance approach goal orientation was not statistically smaller than performance avoidance goal orientation (\( p > .05 \)). For exam 1, mastery goal orientation (Mean = 3.28) was not statistically greater than performance approach goal orientation (Mean = 2.89, \( p > .05 \)) and mastery goal orientation was not statistically greater than performance avoidance goal orientation (Mean = 3.31, \( p > .05 \)). Performance approach goal orientation was not statistically smaller than performance avoidance goal orientation (\( p > .05 \)). For assignment 2, mastery goal orientation (Mean = 2.84) was not
statistically greater than performance approach goal orientation (Mean = 2.93, p > .05) and mastery goal orientation was not statistically smaller performance avoidance goal orientation (Mean = 3.19, p > .05). Performance approach goal orientation was not significantly smaller than performance avoidance goal orientation (p > .05). For exam 2, mastery approach goal orientation (Mean = 4.21) was statistically greater than performance approach goal orientation (Mean = 2.33, p < .05) and mastery goal orientation was statistically greater than performance avoidance (Mean = 2.51, p < .05). Performance approach goal orientation was not statistically smaller than performance avoidance goal orientation (p > .05). The statistically detectable interaction suggests that the outcomes of goal orientations were not identical at each level of the different tasks. Thus, as in study 1, the type of tasks changes the goal orientation students adopt.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Time 1 General Context</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Time 2 Assignment 1</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Time 3 Exam 1</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Time 4 Assignment 2</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Time 5 Exam 2</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Overall Orientation Level</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery</td>
<td>4.34</td>
<td>.71</td>
<td>.92</td>
<td>.94</td>
<td>4.20</td>
<td>.92</td>
<td>.94</td>
<td>.75</td>
<td>3.21</td>
<td>.81</td>
<td>.75</td>
<td>2.90</td>
<td>1.10</td>
<td>.87</td>
<td>.91</td>
<td>.77</td>
<td>4.18</td>
<td>.84</td>
<td>.91</td>
<td>.77</td>
<td>3.77</td>
<td>.87</td>
</tr>
<tr>
<td>Performance Approach</td>
<td>2.55</td>
<td>1.04</td>
<td>.89</td>
<td>.89</td>
<td>2.67</td>
<td>1.17</td>
<td>.89</td>
<td>.83</td>
<td>2.87</td>
<td>.93</td>
<td>.83</td>
<td>2.87</td>
<td>.90</td>
<td>.66</td>
<td>.99</td>
<td>2.65</td>
<td>2.31</td>
<td>1.14</td>
<td>.99</td>
<td>2.65</td>
<td>2.88</td>
<td>.87</td>
</tr>
<tr>
<td>Performance Avoidance</td>
<td>2.65</td>
<td>.92</td>
<td>.84</td>
<td>.79</td>
<td>2.88</td>
<td>1.00</td>
<td>.79</td>
<td>.57</td>
<td>3.28</td>
<td>.76</td>
<td>.57</td>
<td>3.08</td>
<td>.95</td>
<td>.74</td>
<td>2.53</td>
<td>.87</td>
<td>2.88</td>
<td>1.09</td>
<td>.87</td>
<td>2.88</td>
<td>3.07</td>
<td></td>
</tr>
<tr>
<td>Overall Goal Level (across scale)</td>
<td>3.18</td>
<td>3.25</td>
<td>3.12</td>
<td>2.95</td>
<td>3.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Ns varied across time. N = 30, N = 29, N = 30, N = 30, N = 30 for times 1, 2, 3, 4, and 5, respectively.
Table 11  Test-Retest Reliability Coefficients for Goal Orientations: Study 2

<table>
<thead>
<tr>
<th></th>
<th>rTime 1•Time 2</th>
<th>rTime 1•Time 3</th>
<th>rTime 1•Time 4</th>
<th>rTime 1•Time 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery</td>
<td>.56*</td>
<td>.38*</td>
<td>.34</td>
<td>.61**</td>
</tr>
<tr>
<td>Performance Approach</td>
<td>.82**</td>
<td>.76**</td>
<td>.76**</td>
<td>.73**</td>
</tr>
<tr>
<td>Performance Avoidance</td>
<td>.67**</td>
<td>.46*</td>
<td>.53**</td>
<td>.55**</td>
</tr>
</tbody>
</table>

Note: **. Correlation is significant at the .01 level. *. Correlation is significant at the .05 level.

Figure 6  Stability of Goal Orientation Across Time: Study 2
<table>
<thead>
<tr>
<th>Table 12</th>
<th>Correlations Between Each Goal Orientation and Performance Across Tasks For Study 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Assignment 1</strong></td>
<td></td>
</tr>
<tr>
<td>Mastery</td>
<td>1</td>
</tr>
<tr>
<td>Approach</td>
<td>.07</td>
</tr>
<tr>
<td>Performance</td>
<td>.02</td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.14</td>
</tr>
<tr>
<td><strong>Exam 1</strong></td>
<td></td>
</tr>
<tr>
<td>Mastery</td>
<td>1</td>
</tr>
<tr>
<td>Approach</td>
<td>.69**</td>
</tr>
<tr>
<td>Performance</td>
<td>.43*</td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.22</td>
</tr>
<tr>
<td><strong>Assignment 2</strong></td>
<td></td>
</tr>
<tr>
<td>Mastery</td>
<td>1</td>
</tr>
<tr>
<td>Approach</td>
<td>.53**</td>
</tr>
<tr>
<td>Performance</td>
<td>.17</td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.31</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>--------</td>
<td>-----</td>
</tr>
<tr>
<td>Mastery</td>
<td></td>
</tr>
<tr>
<td>Performance Approach</td>
<td>.10</td>
</tr>
<tr>
<td>Performance Avoidance</td>
<td>.24</td>
</tr>
<tr>
<td>Performance</td>
<td>.26</td>
</tr>
</tbody>
</table>

Note: **. Correlation is significant at the .01 level. * . Correlation is significant at the .05 level.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Two studies in two undergraduate introductory educational psychology classes were conducted to investigate whether students' achievement goal orientations change as tasks change. Study two served as a replication of Study 1 as the two classes used different texts and completed different assignments. The studies were conducted using the survey method. A 3 (goal orientation subscale) x 4 (time) doubly multivariate repeated measures analysis of variance (ANOVA) design was used for this study.

Over the course of a semester, a valid and reliable measure was used to measure students' self-reported achievement goal orientations. The instrument was administered five times over the semester; as general context, before assignment 1, before exam 2, before assignment 2, and before exam 2. Assignments were essays and exams were multiple choice. Once during the course of both studies, a classroom observation was conducted and instructors completed a valid and reliable instrument to assess their instructors' goal-related approaches to teaching. The preceding assessments were conducted to ensure equivalent instructional designs and classroom goal structures across classes. Comparisons of item difficulties across task in each study were also conducted using Rasch Analysis (Adams & Khoo, 1994). The Rasch model's common person
equating method was used to compare exams 1 and 2 and assignments 1 and 2 because both sets of tasks shared the same tables of specifications. However, comparisons among assignments and exams (different tables of specifications) were conducted by comparing person ability means. Item difficulty analysis was conducted to assess and ensure equivalent difficulty levels across tasks since empirical studies have demonstrated that correlations exist between task difficulty and goal orientations (see Dweck, 1986; Dweck & Leggett, 1988; Elliot & Dweck, 1988; Ames & Archer, 1988). One general research hypothesis was investigated in this study. I hypothesized that the level of students’ achievement goal orientations will change as tasks change.

Conclusions

A primary purpose of the present study was to examine whether goal orientation is a stable personality trait. Results from the two studies provided strong evidence in support of my hypothesis that the level of students’ achievement goal orientations changes as task change.

Specifically, in Study 1, at general context, students primarily adopted a mastery goal orientation, followed by performance avoidance and then performance approach goal orientation. By assignment 1, participants of Study 1, maintained a mastery goal orientation but the level of performance avoidance goal orientation rose to a statistically equivalent level as mastery goal orientation. At exam 1, the goal orientations that students held were not statistically different. By assignment 2, students again adopted a mastery and performance avoidance approach to learning and this remained the same at exam 2.
In study 2, results were replicated and a significant interaction was also found such that at general context, students primarily adopted a mastery goal orientation, followed by performance avoidance and then performance approach goal orientation. By assignment 1, students’ goal orientations were at the same level statistically and remained so up to assignment 2. By exam 2, students reverted to adopting a mastery goal orientation, followed by performance avoidance and then by performance approach. In both studies, goal orientations changed as a function of context. The similarity in the instability of goal orientation between the two studies is impressive given that in both studies the assignments were different and instructors used different textbooks.

This suggests that at different times or tasks during any academic-relevant situation, a student may adopt varying levels of goal orientation or may even abandon one goal orientation for another. My findings appear to be conceptually consistent with the extant literature in self-regulated learning. Specifically, Winne and Hadwin’s (1998) four-phase model of self-regulation postulates that during any learning process students progress in four phases: task definition, goal setting and planning, enactment, and adaptation. In the first phase, students develop perceptions about the task and perceptions of goals for this task. Given these perceptions, at stage two, students develop goals and plans to engage in the specific task and may even re-frame the goals perceived in stage one, if these perceptions are not consistent with their personal standards. In stage three, enactment of these goals and plans formulated in stage two is conducted and finally in stage four, students contemplate the experience of the first three stages and make changes to their cognitive structure for any future task engagement. Winne and Hadwin identified five facets of tasks that students cope with in any learning process: conditions (affects how the
tasks will be engaged), operations (tactics and strategies to address tasks), products (information created by operations), evaluations (feedback about products), and standards (criteria against which products are monitored). They suggested that these facets are inherent in all four stages of the learning process. The theorists postulated that environmental factors and cognitive information influence conditions. Thus, they suggested that goals change as the task unfolds and the conditions under which these goals develop and change may be influenced by environmental factors. The findings of the present studies may suggest that Winne and Hadwin’s (1998) postulation can be extended to students’ achievement goal orientations. Goal orientations may change given other environmental situations such as test anxiety as may have been the case in Study 1 where at exam 1, the change in the level of goal orientations was most prominent. It may be that goal orientations are stable but may change given other environmental situations.

In addition, existing goal theory has not questioned the effect of context on goal orientation. In fact, researchers have suggested that goal orientation is a stable personality trait (e.g., Dweck & Leggett, 1988). Consequently, research examining goal orientation focuses on collecting self-reported goal orientation measures at only one time during the course of the study (e.g., Ames, 1992; Elliott & McGregor, 1999; Dweck, 1986; Newman, 1998; Butler, 1987; Middleton & Church, 1997). However, it appears that the results of my current studies steer away from the traditional way of conceptualizing goal orientation as a stable personality trait. This implies that researchers can now assess task contexts as antecedents to goal orientation in any learning situation. This may allow for a more grounded understanding of goal orientation within the goal orientation literature.
Goal theorists adopting the trichotomous goal framework have examined the relationship between goal orientation and other academic outcomes (Elliott & Harackiewicz, 1996; Pintrich, 2000a; Elliott & Church, 1997; Elliott & McGregor, 1999). However, the findings have been conflicting, specifically for performance approach goal orientation. Some studies found a positive relationship between performance approach goal orientations and academic outcomes (Elliott & McGregor, 1999; Eliot & Church, 1997; Ryan & Pintrich, 1998 Eliot & Church, 1997). However, some studies have found a negative relationship between performance approach and academic outcomes. My findings may indicate that looking at goal orientation at different tasks during the course of a class could provide a more accurate view of the relations between goal orientations and academic outcomes and hence resolve the ongoing dilemma of conflicting performance approach results.

Furthermore, there is a debate over the multiple goal and mastery goal perspective in the goal orientation field. Some researchers (e.g., Harackiewicz, Barron, & Elliott, 1998; Harackiewicz, Barron, Carter & Elliott, 2002; Pintrich, 2000b) have advocated a multiple goal perspective whereby suggesting that adopting both mastery and performance-approach goal orientations may be most beneficial to a student since he/she could reap the benefits of both goals. On the other hand, some researchers (e.g., Kaplan & Middleton, 2002; Midgley, Kaplan & Middleton, 2001) have advocated the mastery goal perspective in which mastery goals are considered to be the most beneficial for students. However, the findings of my studies may suggest that the task that students engage in may serve as antecedents to the type of goal orientation that students adopt at any given time during the learning process. Thus, it may be that the debate over the goals that
students should adopt could be reconciled if researchers on both sides of the issue concentrate on investigating the type of task that are most beneficial to adaptive goal orientation adoptions.

The instability of goal orientations holds three major implications. The first concerns the theoretical implication. Traditionally, goal orientation theory has conceptualized that goal orientations are unaffected by factors such as task context. In fact, Dweck and Leggett (1988) characterized goal orientation as a stable personality trait that produces specific cognitive, affective, and behavioral patterns. Moreover, traditionally, empirical studies examining the relationship between goal orientation and performance (e.g. VandeWalle, et al., 2001; Elliott & McGregor, 1999; Vandewalle et al., 1999) and other achievement related constructs (e.g., Dweck, 1988; Elliott & Church, 1997; Elliott & Harackiewicz, 1996; Jagacinski & Nicholls, 1987; Newman, 1998) have examined goal orientation at only one time indicating that goal orientation is stable. My results suggest another perspective for assessing and conceptualizing goal orientation. Consequently, goal orientations may be better understood if goal orientation theorists study goal orientation at multiple times across multiple tasks during the learning process. Furthermore, although it is useful for theorists and researchers to know how students’ achievement goal orientations are related to performance and other academic constructs (e.g., help-seeking, task difficulty, intrinsic motivation, etcetera) at only one time point, my results suggest that theorists may better understand goal orientation and its relationship with other academic constructs by studying students’ goal orientation in a setting where multiple tasks are assigned.
The second implication of my findings concerns research methodology. It may be that if varying tasks can cause subsequent changes in the goal orientations that students adopt, then the effect of goal orientation on academic outcomes may depend on when goal orientations are measured. For example, by assignment 1 in Study 1, performance approach goal orientation was the lowest goal orientation students adopted at that time. However, by exam 1, students’ performance approach goals had risen such that they were statistically equal to their mastery goal orientation; different levels of performance approach goal orientation may have yielded different academic outcomes. Moreover, Senko and Harackiewicz (2005) have demonstrated that the time goal orientation measures are taken can affect important outcomes such as exam performance or class interest. Thus, future research into the relationship between goal orientation and academic outcomes should take into account the time or task at which goal orientations are measured. It may be that if achievement goal theorists take into account the time at which goal orientations are measured, the debate over the conflicting findings for performance approach goal orientation and academic outcomes may be resolved.

The last implication concerns classroom application. Researchers have linked mastery and performance approach classroom goal structures to students’ adoption of mastery and performance goals (e.g., Nolen & Haladyna, 1990; Roeser, Midgley, & Urdan, 1996; Urdan & Midgley, 2003). Theorists have suggested that a mastery goal structure will reduce the negative effects of endorsing personal performance-approach goals (Linnenbrink & Pintrich, 2001, Urdan, 2001). My findings indicate that at any one time during the course of a class, students may adopt varying goals including performance-approach goals. Thus, it may be beneficial for students if teachers are cognizant of...
consistently adopting adaptive mastery goal structures in the classroom to buffer any negative consequences of adopting performance approach goals.

Moreover, by understanding that goal orientations change as tasks change, educators can implement instructional techniques that may encourage goal orientations that could improve adaptive performance patterns and outcomes.

Some limitations of this study are noteworthy. First, classroom context across classes differed slightly and thus this variable was not controlled across studies. Hence, any change in goal orientation across tasks within both studies could be attributed to classroom context rather than goal orientation. In fact, researchers (e.g., Linnebrink & Pintrich, 2001) have proposed that classroom context can affect students’ personal goal orientations.

Second, only one classroom observation was conducted during the course of the studies. This may not have been sufficient for an accurate depiction of instructional design across classes. In addition, observer bias and observer effect may have occurred during observations, which could have biased findings across studies.

Third, the studies conducted here comprised approximately thirty students per study constituting too small a sample size to generalize to the entire population. In a classroom based research such as the current study, there is a possibility of large amounts of error and insufficient power.

Fourth, the current study did not assess or control for feedback. Researchers (e.g., Williams, Donavan & Dodge, 2000; Winne et al., 2005; Senko & Harackiewicz, 2005; Dweck & Elliott, 1983) have suggested that individuals’ goals change as a function of
feedback. Hence, the findings of the present study may be due to the effect of feedback on goal orientation and not entirely task contexts.

Fifth, the study spanned only the first half of the semester. However, more accurate accounts of the stability of goal orientation could be obtained if students’ self-reported measure of goal orientation was taken over the course of a semester.

Last, for Study 2, students worked collaboratively to complete assignment 1. Group assignments may constitute different contexts than individual work. Thus, this may mean that context was not adequately controlled in Study 2.

Recommendations

Future research may want to include more subjects, preferably with the same instructor so that variables including assigned work and classroom design may be better controlled and thus provide a stronger case for any findings. In addition, future researchers replicating this study may want to include more classroom observations (more accuracy in assessing instructional designs across studies) and use more triangulation methods including a second observer to control for observer bias.

Future research may also examine the relationship between goal orientation and performance across multiple tasks and feedback episodes. In this way, the effect of feedback could be investigated to examine whether or not the task context or feedback change goal orientation. Researchers can determine whether goal orientations really change because of the specific task at hand or whether the feedback students receive after each task affect their subsequent goals for the upcoming task.
Future research may also wish to include various other task contexts including group assignments and online courses. Future research can assess whether goal orientation changes as a function of various task contexts. A more grounded understanding of the instability of goal orientation may result.

In addition, the current studies did not address the recently proposed mastery-avoidance goal orientation, which refers to the goal to avoid not understanding and learning class material (Elliott & McGregor, 2001). Future research could assess whether this goal orientation changes in a similar manner to the goal orientations examined here.

Last, the current studies were conducted in naturalistic settings. While this gives an accurate account of students' goal orientation, a laboratory approach to examining causal effects of changes in task on goal orientation could be pursued. Future research may want to control the structure of the assignments and exams assigned to students so that task difficulty across tasks could be better controlled. In addition, task context could be better controlled. Future researchers may want to ensure that all assignments and exams are graded on the same tables of specifications and share common items so that Rasch test equating analysis could be done between all tasks.
APPENDIX I

INFORMED CONSENT FORMS

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

INFORMED CONSENT

Department of Educational Psychology

TITLE OF STUDY: Examining the Stability of Goal Orientation
INVESTIGATOR(S): Dr. Krista R. Muis and Ordene V. Edwards
CONTACT PHONE NUMBER: 702-895-0909

Purpose of the Study
You are invited to participate in a research study. The purpose of this project is to examine the relationships among goal orientations, self-regulated learning and performance over multiple tasks and multiple feedback episodes.

Participants
You are being asked to participate in the study because you are enrolled in an Educational Psychology class at UNLV.

Procedures
If you would like to participate, we'll ask you for some basic information about yourself (your age, sex, major, GPA), then you'll fill out two questionnaires. The questionnaires are designed to measure the types of goals you have for learning, your confidence in doing tasks for this course, and the types of learning strategies you use to study for this course. The questionnaires should take you about 45–60 minutes to complete. You will fill out the questionnaires once at the beginning of the semester, after your first assignment, after your second assignment, after your midterm exam and again after your final exam. Your grades on each of the assignments and exams and your final grade will also be collected.

81

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Benefits of Participation
Benefits include an opportunity for you to learn about your goals and learning strategies when learning. Having the opportunity to assess your goals and learning strategies may help you identify other types of goals and learning strategies that may benefit learning. Benefits may also include an opportunity to earn course credit for participation from the educational psychology research pool.

Risks of Participation
There are risks involved in all research studies. This study may include only minimal risks. A possible risk is anxiety normally associated with filling out questionnaires.

Cost/Compensation
There will not be financial cost to you to participate in this study. The study will take approximately 12 hours of your time over the course of the semester. You will be compensated for your time in the form of extra course credit (5%) if you complete all components of the study. If you complete only part of the study, you will be partly compensated, commensurate with the amount of participation time. For example, if you complete 6 of the 12 hours, you will receive 2.5% rather than 5%. The University of Nevada, Las Vegas may not provide compensation or free medical care for an unanticipated injury sustained as a result of participating in this research study.

Contact Information
If you have any questions or concerns about the study, you may contact Dr. Krista R. Muis at 702-895-0909. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 702-895-2794.

Voluntary Participation
Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study. After the storage time the information gathered will be destroyed.

Participant Consent:
I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.
Signature of Participant   Date

Participant Name (Please Print)

Participant Note: Please do not sign this document if the Approval Stamp is missing or is expired.
Purpose of the Study

You are invited to participate in a research study. The purpose of this study is to examine the relationships among goal orientations, self-regulated learning and performance over multiple tasks.

Participants

You are being asked to participate in the study because you teach an Educational Psychology class at UNLV.

Procedures

If you would like to participate, you will be asked to complete one questionnaire. The questionnaire is designed to measure the types of goal-oriented instructional techniques that you use in your classroom. The questionnaire should take you about 10-15 minutes to complete. There will be one class session of teacher observation.

Benefits of Participation

There may be direct benefits to you from participating in this study, as you may have an opportunity for you to learn about your goal-oriented instructional techniques and overall classroom design. Having the opportunity to assess your goal structures and overall classroom design may help you identify other types of goal structures and overall instructional designs that may benefit learners.

Risks of Participation

There are risks involved in all research studies. This study may include only minimal risks. A possible risk is anxiety normally associated with filling out questionnaires and being observed.
Cost /Compensation
There will not be financial cost to you to participate in this study. The study will take approximately 2 hours of your time over the course of the semester. There will be no compensation provided.

Contact Information
If you have any questions or concerns about the study, you may contact Dr. Krista R. Muis at 702-895-0909. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 702-895-2794.

Voluntary Participation
Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study. After the storage time the information gathered will be destroyed.

Participant Consent:
I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

_________________________    ____________________
Signature of Participant       Date

Participant Name (Please Print)

Participant Note: Please do not sign this document if the Approval Stamp is missing or is expired.
APPENDIX II

TABLES OF SURVEY ITEMS

DEMOGRAPHIC QUESTIONNAIRE

Please answer the following questions. Your information will be kept confidential.

_____ Name
_____ Age (in years)
_____ Sex (F or M)
_____ Grade Point Average in all your post-secondary studies (0-4.0)
_____ Academic major
_____ Academic minor
_____ Number of courses enrolled in this semester
_____ Number of courses taken at UNLV, including this semester
_____ Year of study (e.g. Freshman, Sophomore, Junior, or Senior)
_____ Average hours worked per week
_____ Average hours studying per week
_____ Was English the first language you learned to speak (Yes or No).
   If no, how old were you when you learned to speak English? ______
_____ Was English the first language you learned to write (Yes or No).
   If no, how old were you when you learned to write in English? ______

Which Educational Psychology class are you currently taking at UNLV?

__________________________________________________________

86

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
The first question is an example.

I like strawberry ice cream.

1 2 3 4 5
Not at all true Somewhat true Very true

Here are some questions about yourself as a student in this class. Please circle the number that best describes what you think.

1. It’s important to me that I don’t look stupid in class.

1 2 3 4 5
Not at all true Somewhat true Very true

2. It’s important to me that other students in my class think I am good at my class work.

1 2 3 4 5
Not at all true Somewhat true Very true

3. It’s important to me that I learn a lot of new concepts this year.

1 2 3 4 5
Not at all true Somewhat true Very true

4. One of my goals is to show others that I’m good at my class work.

1 2 3 4 5
Not at all true Somewhat true Very true

5. One of my goals in class is to learn as much as I can.

1 2 3 4 5
Not at all true Somewhat true Very true

6. One of my goals is to keep others from thinking I’m not smart in class.

1 2 3 4 5
Not at all true Somewhat true Very true
7. One of my goals is to master a lot of new skills this year.

1  2  3  4  5
Not at all true  Somewhat true  Very true

8. One of my goals is to show others that class work is easy for me.

1  2  3  4  5
Not at all true  Somewhat true  Very true

9. It's important to me that I thoroughly understand my class work.

1  2  3  4  5
Not at all true  Somewhat true  Very true

10. One of my goals is to look smart in comparison to the other students in my class.

1  2  3  4  5
Not at all true  Somewhat true  Very true

11. One of my goals in class is to avoid looking like I have trouble doing the work.

1  2  3  4  5
Not at all true  Somewhat true  Very true

12. It's important to me that I look smart compared to others in my class.

1  2  3  4  5
Not at all true  Somewhat true  Very true

13. It's important to me that my teacher doesn't think that I know less than others in class.

1  2  3  4  5
Not at all true  Somewhat true  Very true

14. It's important to me that I improve my skills this year.

1  2  3  4  5
Not at all true  Somewhat true  Very true
**PATTERN OF ADAPTIVE LEARNING SCALE**  
**TEACHER VERSION**

Here are some questions about you as a teacher in this class. Please circle the number that best describes what you think.

1. I give special privileges to students who do the best work.
   
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. I make a special effort to recognize students’ individual progress, even if they are below grade level.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. I display the work of the highest achieving students as an example.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. I consider how much students have improved when I grade them.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. I help students understand how their performance compares to others.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. I encourage students to compete with each other.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. I point out those students who do well as a model for the other students.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
8. I give a wide range of assignments, matched to students’ needs and skill level.

1 2 3 4 5
Strongly Disagree Somewhat Agree Strongly Agree

9. During class, I often provide several different activities so that students can choose among them.

1 2 3 4 5
Strongly Disagree Somewhat Agree Strongly Agree
CLASSROOM OBSERVATION WORKSHEET

1. ______ Made objective (s) of the lesson clear
2. ______ Related lesson to previous lessons
3. ______ Presented lesson in a logical sequence
4. ______ Explained ideas clearly
5. ______ Used examples to make points clear
6. ______ Paced lesson appropriately
7. ______ Modeled and encouraged critical thinking
8. ______ Teaching style commanded a majority of students to be actively involved
9. ______ Responded to students’ problems and questions raised during class
10. ______ Modeled respect for diverse opinions.
11. ______ Related lesson to real life events/experiences
12. ______ Maintained eye contact with students
13. ______ Promoted a warm and open classroom atmosphere
14. ______ Communicated interest in student learning
15. ______ Knowledge of subject matter was evident
16. ______ Used instructional technology effectively (if applicable)
17. ______ Showed enthusiasm for teaching
18. ______ Encouraged questions from students
19. ______ Encouraged discussions from students
20. ______ Effectively maintained the attention of students
21. _______ Periodically asked questions to monitor students understanding

22. _______ Probed students when answers were incorrect/incomplete

23. _______ Praised or encouraged students when they provided ideas, comments or suggestions.

24. _______ Provided positive verbal feedback to students who correctly answer questions or give valid comments, ideas or suggestions.

25. _______ Provided different activities during lesson (PALS).

26. _______ Accepted or used students' ideas or suggestions.

27. Types and description of assignments/activities provided:

28. Teacher nonverbal behaviors. Example walked around classroom, show preference to some or certain student (s).

29. Positive consequences used:
30. Negative consequences used:

31. Promoted a competitive atmosphere (PALS):

32. Other observations:

33. Own experience, thoughts and feelings:
APPENDIX III

PERMISSION TO USE COPYRIGHTED MATERIAL

Permission to Use Copyrighted Material

University of Nevada, Las Vegas

I, Michael Middleton, holder of copyrighted material entitled Pattern of Adaptive Learning Survey (PALS) authored by Midgley et al. and originally published on the Internet at www.umich.edu/~pals/pal hereby give permission for the author to use the above described material in total or in part for inclusion in a master's thesis/doctoral dissertation at the University of Nevada, Las Vegas.

I also agree that the author may execute the standard contract with University Microfilms, Inc. for microform reproduction of the completed dissertation, including the materials to which I hold copyright.

Michael Middleton 3/2/06
Signature Date

Michael Middleton Assistant Professor
Name (typed) Title

University of New Hampshire
Representing

94

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


96

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
VITA

Graduate College
University of Nevada, Las Vegas

Ordene V Edwards

Local Address:
7099 Rhapsody Lane
Las Vegas, Nevada 89119

Degree:
Bachelor of Arts, Psychology, 2003
Fort Valley State University

Special Honors and Awards:
Fort Valley State University Honors Convocation Award, 2003
Who’s Who Among Students in American Universities and Colleges, 2005

Publications:


Thesis Title: Examining the Stability of Goal Orientation

Thesis Examination Committee:
Chairperson, Dr. Krista R. Muis, Ph. D.
Committee Member, Dr. Gregory Schraw, Ph. D.
Committee Member, Dr. CarolAnne Kardash, Ph. D.
Graduate Faculty Representative, Dr. Kent J. Crippen, Ph. D.