Depressive Symptoms, Anxiety, and Perceived Competence as Predictors of Goal Orientation

by

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B.A., Queen's University, 1999
BScH., Queen's University, 2000

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

MASTERS OF ARTS

in the Department of Educational Psychology and Leadership Studies

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University of Victoria

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Abstract

Research has established that there are important psychological and educational consequences to the goal orientations that students adopt (Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000). Therefore, it is important to understand the antecedents of such goal orientations, an area that has received little empirical work (Braten & Stromso, 2006; Pintrich & Schunk, 2002). Given this need, and the relevance of depression and anxiety to student learning and well being (Pekrun, Elliot, & Maier, 2006), this study provides important information by examining the relationship between these two domains. Multiple-regression analyses conducted on data collected from 196 post secondary students revealed performance avoid and mastery orientation were significantly predicted by measures of depressive symptoms and perceived academic competence. Different affect and goal patterns were found for males and females, with trait anxiety being a strong predictor of performance avoid orientation for females but not males. There were different affect and goal patterns for students in their first semester

and second semester. Predictor variables accounted for significant variance for the spring semester cohort for mastery, performance approach, and performance avoid orientation, but only for mastery orientation with the fall semester cohort. Consilience for the goal orientation constructs, and the suitability of trait versus state anxiety measures are also discussed.

Table of Contents

Supervisory Committee ii

Abstract iii

Table of Contents v

List of Tables ix

List of Figures x

Chapter One: Introduction 1

Overview 1

Goal Orientations 1

Outcomes of Goal Orientations 3

Antecedents of Goal Orientations 4

Purpose of the Study 8

Research Questions 9

Summary of Chapter One 9

Chapter Two: Literature Review 11

Overview 11

Review of Literature 11

Affect & Goal Orientations 11

Depressive Symptoms 11

Anxiety 16

Perceived Competence & Goal Orientations 30

Gender Differences 32

Summary of Chapter Two 33

Chapter Three: Methodology 35

Overview 35

Population and Sampling 35

Measures 37

Goal Orientation 37

Patterns of Adaptive Learning Survey 37

Free Response Data 38

Depressive Symptoms 39

Anxiety 41

Perceived Competence 42

Procedure 44

Data Analysis 45

Multiple Regression 45

Hypotheses 46

Secondary Data Analysis 48

Summary of Chapter Three 49

Chapter 4: Results 50

Sample Characteristics 50

Preliminary Analyses 50

Internal Reliability 50

Variable Means and Intercorrelations 51

Correlation Analysis 52

Cohort Differences 55

Gender Differences 55

Hopes and Fears Open-ended Responses 55

Regression Analyses 60

Regression of Goal Orientation Themes from the University Hopes and Fears onto Depressive Symptoms, Anxiety, and Perceived Competence 60

Regression of PALS Goal Orientation Scores onto Depressive Symptoms, Anxiety, and Perceived Competence Scores 60

Mastery Orientation 62

Performance Approach Orientation 62

Performance Avoid Orientation 63

Gender Differences 64

Master Orientation 64

Performance Approach Orientation 65

Performance Avoid Orientation 65

Cohort Differences 69

Mastery Orientation 69

Performance Approach Orientation 69

Performance Avoid Orientation 69

Chapter 5: Discussion 75

Overview 75

Main Research Question 75

Secondary Research Questions 76

Do self-generated statements of school year goals demonstrate consilience for the constructs outlined by the PALS? 76

Do state and trait anxiety predict goal orientations differently? 77

Do female students demonstrate different affect and goal patterns than male students? 78

Do students in their first semester of university demonstrate different affect and goal patterns than students in their second semester? 81

Additional Findings 83

Limitations and Future Research 83

Conclusion 86

References 87

Appendix A: Patterns of Adaptive Learning Survey Items 107

Appendix B: Beck Depression Inventory 108

Appendix C: Self Description Questionnaire Items 111

Appendix D: Informed Consent & Release of Information 114

Appendix E: Summary of Regression Analysis for Trait Anxiety, State Anxiety, Depressive Symptoms, Anxiety, Perceived Competence, and the Interaction of Depressive Symptoms by Perceived Competence Predicting Free Responses 116

List of Tables

Table 1. Two Goal Orientations and Their Approach and Avoidance States 3

Table 2. Research Articles that Address Affect & Goal Orientation 21

Table 3. Inter-item reliability for BDI, STAI, SDQ-III, and PALS 50

Table 4. Mean Scores for Predictor Variables and Motivation Orientation Subscales (N = 196) 52

Table 5. Correlations Between Measures (N = 179) 54

Table 6. Examples of Open-ended Responses for Each Category of Hopes and Fears 56

Table 7. Frequency count, Mean, and Standard Error for Open-ended Response Categories of Hopes and Fears 59

Table 8. Regression Coefficients for Three Motivational Orientation Models; Mastery, Performance Approach, and Performance Avoid 61

Table 9. Regression Coefficients for Females (N = 105) and Males (N = 74) for Three Motivational Orientation Models; Mastery, Performance Approach, and Performance Avoid 66

Table 10. Regression Coefficients for Fall Cohort (N = 58) and Spring Cohort (N = 121) for Three Motivational Orientation Models; Mastery, Performance Approach, and Performance Avoid 71

List of Figures

Figure 1. Depressive Symptoms by Perceived Academic Competence Interaction for Performance Approach Orientation 63

Figure 2. Depressive Symptoms by Perceived Academic Competence Interaction for Performance Avoid Orientation 64

Figure 3. Depressive Symptoms by Perceived Academic Competence Interaction for Performance Avoid Orientation for Females. 68

Figure 4. Depressive Symptoms by Perceived Academic Competence Interaction for Performance Approach Orientation for Spring Cohort. 73

Figure 5. Depressive Symptoms by Perceived Academic Competence Interaction for Performance Avoid Orientation for Spring Cohort. 74

Chapter One: Introduction

Overview

This chapter introduces the current study by discussing goal orientations, the significant motivational and emotional consequences of adopting them, and the importance in understanding their antecedents. The need for and purpose of the current study emerges from this discussion. Specific research questions are then discussed.

Goal Orientations

Goal orientations reflect the general reasons why students engage in academic tasks. Dweck's (Dweck, 1986; Dweck & Leggett, 1988) social cognitive theory of motivation helped pioneer a goals approach to motivation and has attracted a great deal of attention over the past two decades. The goal theory developed by Dweck differentiates between two types of goal orientations: a mastery orientation, in which students' achievement goal is to improve their competence and acquire new knowledge, and a performance orientation, in which students' achievement goal is to demonstrate ability to themselves and others. More recent theory and research (Elliot & Church, 1997a; Elliot, 1999; Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997) suggest two performance goals: performance-approach and performance-avoidance goals. A performance-approach goal involves outperforming others and proving competence, whereas a performance-avoid goal involves guarding against the demonstration of incompetence.

Some researchers have proposed that mastery goals also be divided into approach and avoid goals (Elliot, 1999; Elliot & McGregor, 2001; Linnenbrink & Pintrich, 2002; Pintrich, 2000a; Pintrich, 2000b), such that students with mastery approach goals focus

on advancing learning and understanding and students with mastery avoid goals focus on falling short of their own standards for mastery by not understanding or perfecting material (Linnenbrink & Pintrich, 2002) (See Table 1 for an overview of goal orientations). Unlike performance approach and avoid goals, the distinction between mastery approach and mastery avoid goals is not yet widely accepted or tested. For example, the most commonly used goal orientation measure, the Patterns of Adaptive Learning Survey (PALS), does not distinguish between approach and avoid mastery goals. Operationalizing mastery avoid goals remains a challenge, possibly because the goal of not "being wrong" is in reference to an idealized self or an idealized task outcome, making it difficult to define (Pintrich, 2000a). Future research on perfectionism may clarify this issue. Although preliminary evidence exists for mastery avoid as a separate goal construct (Elliot & McGregor, 2001), in the current study I use the PALS's trichotomous goal framework, identifying mastery, performance approach, and performance avoid achievement goals. These three achievement goals have disparate purposes for involvement in academic tasks, and have been linked to different achievement-related outcomes.

Table 1.

Two Goal Orientations and Their Approach and Avoidance States

	Approach state	Avoid state
Mastery Goal Orientation	Focus on mastering task, learning, understanding Use of standards of self-improvement, progress, deep understanding of task	Focus on avoiding imperfection and misunderstanding Idealized standards of correctness intimidate the learner
Performance Goal Orientation	Focus on being superior, besting others, being the smartest, best at task in comparison to others Use of normative standards such as getting best or highest grades, being top or best performer in class	Focus on avoiding inferiority, not looking stupid or dumb in comparison to others Use of normative standards of not getting the worst grades, being lowest performer in class

Adapted from Pintrich, 2000a p.100

Outcomes of Goal Orientations

In a post-secondary educational context, mastery goals are associated with a range of constructive consequences. They are positively associated with self-efficacy, intrinsic value, and challenge-seeking (Middleton & Midgley, 1997; Shim & Ryan, 2005), lecture engagement (Church, Elliot, & Gable, 2001), intrinsic motivation (Elliot & Church, 1997a), student interest (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000; Harackiewicz, Barron, Tauer, & Elliot, 2002; McGregor & Elliot, 2002a), self regulated learning (Pintrich, Zusho, Schiefele, & Pekrun, 2001), deep processing of course material (Grant & Dweck, 2003), task-oriented coping styles (Morris, Brooks, & May, 2003), and active cognitive engagement (Albaili, 1998; Pintrich & Schrauben, 1992).

In contrast, performance-avoidance goals are associated with maladaptive

outcomes such as poor academic achievement, low intrinsic motivation and interest (Church, Elliot, & Gable, 2001; Elliot & Church, 1997a), and low subjective well being (Elliot, Sheldon, & Church, 1997).

The consequences of adopting performance-approach goals have been more debatable (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Midgley, Kaplan, & Middleton, 2001). There is evidence that in a competitive university setting, performance-approach goals can produce higher grades (Elliot & McGreggor, 1999; Elliot, McGregor, & Gable, 1999), greater effort (Harackiewicz, Barron, & Elliot, 1998), and more persistence at tasks (Li-Fang, 2006). However, performance approach goals have also been associated with maladaptive outcomes such as an unwillingness to seek help and the avoidance of challenging work (Harackiewicz, Barron, & Elliot, 1998; Urdan, 1997; Wolters, Yu, & Pintrich, 1996).

Antecedents of Goal Orientations

Given the significant consequences of adopting particular goal orientations, it is important to understand their antecedents (Linnenbrink & Pintrich, 2002). However, to date, there has been empirical work on only a few factors (Braten & Stromso, 2006). The most studied factor has been students' implicit theory of intelligence. According to Dweck (Dweck, 1986; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995) some hold an incremental theory of intelligence; believing intelligence is malleable and increasable, while others hold an entity theory of intelligence; believing intelligence is fixed and uncontrollable. If one believes that intelligence can grow through learning (incremental theory), they tend to want to learn, and favour challenge, new opportunities, and putting their knowledge to good use. Conversely, if students believe intelligence is fixed (entity

theory), they may worry about how much they have relative to others, and can become preoccupied with validating their intelligence. Easy successes and outperforming others make these students feel smart. Therefore, Dweck's model posits that students with an incremental theory of intelligence are more likely to adopt mastery goals, and students with an entity theory of intelligence are more likely to adopt performance goals. Dweck's empirical work supports this (Dweck, 1999, 2003; Dweck & Leggett, 1988); however, her work has been limited to younger children and does not differentiate between approach and avoidance goals.

It is important to distinguish between age groups when investigating goal orientation, as research (Ablard & Mills, 1996; Leondari & Gialamas, 2002), has found that younger students adopt an incremental view of intelligence more often than older students. As children enter early adolescence, their idea of the nature of ability becomes more differentiated and more adult-like (Nicholls & Miller, 1983). This difference in beliefs of elementary and high school students could be a cognitive developmental change. For example, as children grow older they obtain more experience with society's emphasis on intelligence as a stable trait (Leondari & Gialamas, 2002). Therefore, when interpreting findings on goal orientations it is important to consider the age of the participants.

It is also important to distinguishing between performance approach and performance avoidance goals. Elliot and Church (1997) extended laboratory studies by Elliot and Harackiewicz (1996) by examining goal orientations in the college classroom. Factor analysis confirmed the trichotomous goal framework. Path analysis of the antecedents and outcomes of each goal structure suggest that performance approach and

performance avoid goals are independent, not opposite, orientations with different determinants and consequences. Therefore, studies that do not acknowledge this distinction, such as the previously mentioned work by Dweck, should be interpreted with caution.

The few studies that differentiate between performance approach and performance avoid goals, and use populations of varying ages, show only partial support for Dweck's hypothesis that theories of intelligence predict goal orientations. For example, a study by Dupeyrat and Marine (2005) of returning adult students in France found that an entity theory of intelligence was a negative predictor of mastery goals, and incremental theories of intelligence was a negative predictor of performance-avoidance goals. These relationships were fairly weak (r^2=.10 in both cases) "indicating that goal orientation is not entirely or solely determined by a person's belief about her or his intelligence" (p 56). Furthermore, they found no positive relationships between either theory of intelligence and mastery, performance approach, and performance avoidance goals.

Similarly, Vandewalle (1997) examined learning (mastery), prove (performance approach), and avoid goals with college business students (n=239). He found the correlations between implicit theories of intelligence, assessed by the Implicit Theories of Intelligence Measure (Hong & Dweck, 1992), and goal orientations to be surprisingly weak, particularly for learning (r=-.14, *p=.028)* and prove (r=.18, *p=.007)* goals.

Leondari and Gialama's (2002) study investigated goal orientations of 451 Greek elementary and junior high school students. They found the self-report measure of implicit theories of intelligence (Stipek & Gralinski, 1996) was unrelated to performance

approach and performance avoid goal orientations. It was, as hypothesized, positively related to task goal orientation. Path analysis revealed that although they were related, it was not in a causal manner. Also of interest, incremental beliefs were not related to academic achievement, as would be predicted by Dweck's prior research (Dweck & Leggett, 1988).

Indeed, research has found that constructs other than implicit theories of intelligence also predict goal orientations. Braten and Stromso's (2004 & 2006) study of 80 college students in Norway, found that epistemological beliefs were stronger predictors of goal orientation than implicit theories of intelligence. Specifically, students who believe that learning is a quick, all-or-none process were more likely to adopt performance avoid goals and less likely to adopt mastery goals. How students viewed knowledge construction was also a significant predictor of goal orientations. Students who believed that knowledge is a stable, passively conceived construct tended not to adopt mastery goals.

Several studies indicate that educational context predicts goal orientations (Anderman, Austin, & Johnson, 2002; Linnenbrink & Pintrich, 2001) For example, Church, Elliot, and Gable (2001) showed that classroom environment may influence college students' adoption of goal orientation. In their study of 119 Chemistry students, engaging lectures (β=.39) and lack of harsh examinations (β=-.29) predicted mastery goals, evaluation focus (β=.11) predicted performance-approach goals, and evaluation focus (β=.18) and harsh evaluation (β=.27) predicted performance-avoidance goals.

Other constructs have also predicted goal orientations. In their regression study of 6th and 9th grade students, Wong, Wiest, Cusick (2002) found that autonomy support,

parent attachment, competence and self-worth predicted intrinsic versus extrinsic motivational orientation. Elliot, Sheldon, and Church (1997) investigated both antecedents and outcomes of personal avoidance and approach goals. In terms of antecedents, they found that high neuroticism and low perceived life skills predicted the adoption of personal avoidance goals. They stated that, "it is undoubtedly the case that other dispositions/orientations prompt the adoption of avoidance goals" (p.923) and urge future research in the area.

Clearly more than just implicit theories of intelligence determine students' goal orientations. A further understanding of the antecedents to goal orientations is needed, and some recent research has turned to affective or emotional dimensions. Affect is an important aspect of goal orientation; in fact, some emotion theorists contend that affect and motivation are inextricably linked (Lazarus, 1991). Whether students seek to engage in learning for their own mastery, to outperform others, or to avoid all challenge, these goals will involve affect. Learning is not just a cognitive activity, but an affectively charged one (Schweinle, Meyer, & Turner, 2006). Affect adds meaning to situated learning activities by signalling when the situation is conducive to, or a deterrence of, goal adoption and attainment (Eynde, De Corte, & Verschaffel, 2001). Affect also offers an incentive for participation in learning tasks, as students tend to seek activities that are associated with positive affect (Boekaerts, 1993). Beyond fear of failure and trait test anxiety little empirical work has explored affect and goal orientations.

Purpose of the Study

There are well-established, significant consequences of goal orientations, and as such, understanding their antecedents is important. Research indicates that implicit

theories of intelligence provide only a partial explanation of why students adopt certain goals. Empirical studies examining other antecedents with university samples and using a multi-goal perspective are needed. Affect, an important construct in learning, has typically been examined as an outcome of goal orientations, and empirical work examining it as an antecedent is needed. The purpose of this study is to add to the broader understanding of the antecedents of goal orientations by: (a) using a post-secondary sample, (b) using a trichotomous goal framework, and (c) examining affect as a predictor of student's goal orientations. Perceived competence is also examined as a predictor of goal orientation.

Research Questions

This study examines 3 types of predictors of goal orientation with a post-secondary sample, seeking to answer the question: do depressive symptoms, anxiety, and perceived competence, predict the variation in university students' goal orientations? Secondary research questions to be examined are: (a) do self-generated statements of school year goals demonstrate consilience for the constructs outlined by the PALS, (b) do state and trait anxiety predict goal orientations differently, (c) do female and male students demonstrate different affect and goal patterns, and (d) do students in their first semester of university demonstrate different affect and goal patterns than those in their second semester.

Summary of Chapter One

This chapter introduced goal orientations and their consequences. The need to better understand the antecedents of goal orientations using an adolescent sample and a trichotomous goal framework warrants further investigation. The next chapter presents

literature on the relationship between goal orientations, affect, and perceived competence.

Chapter Two: Literature Review

Overview

Although research has established several consequences of goal orientations, antecedents to goal orientations have received less attention. Schweinle, Meyer, and Turner (2006) suggest that affect, an important construct in learning, may provide insight into students' motivation and goal orientations. In the following chapter I review literature on affect and goal orientations, first examining the literature on depressive affect, and then anxiety. I also review literature examining the relationship between perceived competence and goal orientations.

Review of Literature

Affect & Goal Orientations

Depressive symptoms. Little attention has been paid to the relationship between depressive symptoms and goal orientation. This is quite startling for several reasons. First, depression is one of the most prevalent mental health conditions in North America. In the United States, major depression is the leading cause of disability (National Alliance on Mental Illness, 2007). Rates of depression rise dramatically during mid to late adolescence (Hankin, Abramson, & Siler, 2001). The 1-year prevalence rates of clinical depression increase six fold from 3% to 18% between the ages of 15 and 18 years (Hankin et al., 1998). According to Petersen Compas, Brooks-Gunn, & Stemmler (1993), 25% to 40% of adolescents report experiencing depressed mood. In Canada the lifetime prevalence of depression is 12.2% with the peak prevalence occurring in the group aged 15-25 (Statistics Canada, 2002). It is estimated that the total number of 12-19 year olds in Canada at risk for developing depression is 3.2 million (Public Health Agency of Canada,

2004).

Second, the negative impact of depression in educational contexts is pervasive (Haines, Norris, & Kashy, 1996; Hodges & Plow, 1990). For example, Watson, Quatman, and Swanson (2001) found depressive students lag behind non-depressive students in cumulative GPA, standardized test scores, teacher ratings, and involvement in the classroom. Additionally, in lab settings, experimentally induced depressed mood has been shown to reduce cognitive performance on recall and comprehension tasks (Ellis, Thomas, & Rodriguez, 1984; Leight & Ellis, 1981; Ellis, Ottaway, Varner, & Becker, 1997). Yet despite these general correlations with achievement outcomes, it remains unclear *how* mood disturbance effects achievement motivation in general, and goal orientation in particular.

Despite the prevalence of depression and its negative impact on academic achievement, relatively little empirical work has sought to incorporate depressive affect into our understanding of goal orientation; however, several researchers have urged further examination of the relationship (Pekrun, Elliot, & Maier, 2006; Turner, Thorpe, & Meyer, 1998). Table 2 summarizes to date the goal orientation studies that examine affect (note, as test anxiety is a well studied area, only the test anxiety studies of the last 10 years are included).

Dweck postulates that affect is an outcome of goal orientation (Baer, Grant, & Dweck, 2003; Dweck & Leggett, 1988). Her research has shown that individuals with performance oriented goals are more likely to interpret negative outcomes as providing self-information, and are likely to exhibit a “helpless response” similar to some depressive symptoms. In contrast, individuals whose goals are mastery oriented are more

likely to interpret negative outcomes as providing self-information about the efficacy of their effort and strategy (Dweck, 2000; Uchida, 2005)

Dykman (1998) conducted research exploring the relationship between goals and dysphoria in post-secondary students. He examined self-validation goals (a more generalized form of performance goals) and self-growth goals (a more generalized form of mastery goals), and found that self-validation goals were positively correlated with depressive symptoms, and self-growth goals were negatively correlated with depressive symptoms. He also examined the prevalence of these two goal types in individuals' daily lives and their relation with coping responses. Dykman (1998) found that when faced with negative events, persons oriented towards self-validation show more self-blame and passive sulking than those oriented towards self-growth, who responded with more active problem solving. Furthermore, in a longitudinal study, Dykman (1988) found that when stress increased, students with a self-validation orientation experienced a greater increase in depression that those oriented towards self-growth. A limitation of Dykman's work is that self-growth and self-validation were treated as ends of a single dimension, as many earlier studies in this field did (Murphy & Alexander, 2000a). Current theory and research conceptualizes performance (self-validation) and mastery (self-growth) goals as two orthogonal dimensions (Pintrich, 2000a). In the current study, I examine the relation of depressive symptoms to performance and mastery goal orientations as independent systems.

Dickson and MacLeod (2004a, 2004b, 2006) have conducted a series of studies examining the relation of approach and avoidance goals with depression and anxiety. They found that approach motivation was negatively correlated with depression but

unrelated to anxiety; in contrast, avoidance motivation was positively correlated with anxiety, but unrelated to depression. Dickson and MacLeod (2004b), conducted an experimental study to clarify the unique contributions of approach and avoid goals in students with high depression and anxiety. High depression and mixed depression and anxiety adolescents generated fewer approach goals, but contrary to prediction, they generated no more avoidance goals than did controls. As predicted, high anxiety individuals thought of more avoidance goals, but generated no more approach goals than did the control group. Relative to high anxiety adolescents, high depression (but not mixed) adolescents generated fewer avoidance goals. Dickson & MacLeod, (2006), replicated their findings in a subsequent study of 16 to 18 year old Australian students' causal expectations for future events as a function of mood disturbance. As predicted, dsyphoric adolescents generated more avoidance goals and fewer approach goals than did nondysphoric adolescents. While these studies shed light on the impact of dsyphoria on goal orientations, they examined only avoidance and approach goals, not mastery and performance orientations. The current study builds on this work by including this comparison.

A number of other correlational studies support the relationship between depressive symptoms and goal orientation and suggest that: (a) mastery goals are correlated with increased positive affect and decreased negative affect (Kaplan & Maehr, 1999; Seifert, 1995), (b) performance-avoidance goals are associated with an increase in negative affect (Kaplan & Maehr, 1999; Seifert, 1995; Turner, Thorpe, Meyer, 1998), and (c) performance-approach goals either increase (Seifert, 1995) decrease (Kaplan & Maehr, 1999), or are unrelated to (Roeser, Midgley, & Urdan, 1996) positive affect.

Although theses studies identify a relationship between affect and goal orientation, they do not address causal direction; it is possible that affect determines, at least in part, goal orientation. Seifert (1995) suggests that goals act as defensive mechanisms, in which case goals are not just by-products of goal orientations, but the driving force behind them. When faced with a task, students appraise their ability to accomplish it (self-efficacy), which produces negative emotions if they feel they cannot. Students cope by avoiding failure, or striving to perform better than others as to reassure themselves of their competence. Conversely, if students feel they can accomplish a task, the resulting self-efficacy and positive emotions encourage a mastery orientation. Seifert's (1995) study of 5th graders provides preliminary evidence that negative and positive emotions may predict goal orientation. Seifert used structural equation modelling to test two models: one in which goal orientation predicted emotions, and another in which emotions predicted goal orientation. The first model, of goal orientation predicting emotions did not fit the data (goodness of fit index =.71, χ^2=76.1, $p<.01$), but the second model, of emotion predicting goal orientation, did provide a good fit to the data (goodness of fit index=.9993, χ^2=.15, $p<.70$). However, a dichotomous view of goal orientations limits this research, and the findings from this school-age population may not generalize to adolescents. The current study extends this research by using a trichotomous goal framework (mastery, performance approach, and performance avoid).

Linnenbrink and Pintrich (2002) proposed a model that incorporates affect as both a predictor and an outcome of goal orientations. They distinguish between "affect generated as one works on an activity versus affect generated as a result of success or failure" (p. 69). They theorized that students in a positive mood may adopt more

approach goals than avoid goals, but it may not have an effect on mastery or performance goal adoption. In contrast, students in a negative mood may focus on trying to avoid unwanted outcomes. They concluded by urging further research to examine how existing mood might influence goal adoption.

A recent study by Edens (2006) adds interesting indirect support for the relationship between depressive symptoms and goal orientation. This correlational study of American undergraduate students investigated the relationship between sleep habits and goal orientation. Excessive daytime sleepiness is a symptom of depression, and like depression, has a severe increase during adolescence (National Sleep Foundation, 2002). The study found a significant positive relationship between excessive daytime sleepiness and the tendency to have performance goals.

This study examines depressive symptoms as a predictor of goal orientation. It is hypothesized that depressive symptoms will be a negative predictor of mastery orientation, a positive predictor of performance avoid orientation, and unrelated to performance approach orientation.

Anxiety. Much like the research on depressive symptoms and goal orientation, the literature on anxiety and goal orientation has focused on anxiety as a consequence, not a predictor. In addition, most studies have been limited to test anxiety. Some research in the area had mixed findings, with neither mastery nor performance goals related to test anxiety (Linnenbrink, 2005; Wolters, Yu, & Pintrich, 1996) or with no difference in test anxiety between goal orientations (Pintrich, 2000b). These mixed findings are possibly due to the use of the dichotomous goal framework.

Studies using a multiple goal perspective have found that mastery goals are

unrelated to test anxiety (Elliot & McGregor, 1999; Linnenbrink, 2005; McGregor & Elliot, 2002b), performance-approach goals are either weakly positive or nonsignificant (Elliot, Sheldon, & Church, 1997; Middleton & Midgley, 1997; Sideridis, 2005; Skaalvik, 1997; Zusho, Pintrich, & Cortina, 2005) and performance avoidance goals are positively related (Elliot & McGregor, 1999; McGregor & Elliot, 2002b). Please see Table 2 for details.

Little motivational research has gone beyond test anxiety. One exception is a study by Kasser and Ryan (1996), which examined differential correlates of well being with intrinsic and extrinsic goals. They found higher well-being and less distress, including lower scores on the Hopkins Symptom Checklist's Anxiety Subscale, are positively correlated to intrinsic goals. Although the intrinsic – extrinsic distinction is not the one made in this study, Kasser and Ryan's study is still relevant because extrinsic goals incorporated performance typical aspirations such as social recognition, and intrinsic goals incorporated mastery typical aspirations such as self-acceptance and growth. .

Dykman (1998), in his study of self-validation versus self-growth goals, found that students oriented toward self-validation had greater anxiety than those oriented toward growth. Students were also asked about their feelings in anticipation of an ego-threatening event, students with validation goals experienced greater anxiety than those with growth goals. As mentioned previously, a limitation of this work is that self-growth and self-validation were conceptualized and analyzed as the endpoints of a single dimension.

Recently, studies by Pekrum, Elliot, and Maier (2006), examined discrete

achievement emotions and goal orientations. They found that performance avoidance goals were positive predictors of anxiety for both a German and an American college sample. They acknowledge that emotion-based variables, such as anxiety, may also influence goal adoption, as emotions are known to instigate specific actions (fight, flight, hopelessness, etc.). They postulate that emotions can contribute to the instigation of subsequent action goals, and urge further research in this area.

Van Etten, Pressley, Freebern, and Echevarria (1998) conducted a qualitative analysis of first year college students' beliefs about their motivation. As further evidence for the influence of affect on motivation, an emerging theme was that students believed their self-characteristics, such as anxiety level, influenced their motivation. Consistent with the inverted-U hypothesis, or Yerks-Dawson law (VandenBos, 2006), they perceived that their mild anxiety and worry about the need to study increased their academic motivation (similar to an approach goal), while high anxiety motivated them to distract themselves and avoid learning (similar to an avoidance goal).

Dickson (2006) conducted an experimental study of British undergraduate students, examining response variations on approach and avoidance goal systems. Based on Hospital Anxiety and Depression Scale (HADS) scores, Dickson classified participants as anxious or non-anxious. Then, participants completed Dickson's Goal Task, in which within 75 seconds they were to write as many goals that came to mind for an approach prompt ("In the future it will be important for me to...") and then an avoid prompt ("In the future it will be important for me to avoid..."). As predicted, the anxious group generated more avoidance goals than the non-anxious group, $F(1, 72) = 10.63$, $p < .01$, $\eta^2 = .13$. There were no significant differences between the number of approach goals

the groups generated. The current study builds on these findings by distinguishing between mastery approach and performance approach goals. Specifically, the current study tests the hypothesis that anxiety predicts variations in students' goal orientations, and that anxiety is positively related to performance avoidance goals, but unrelated to performance and mastery approach goals.

Elliot and McGregor (1999) propose a model of affect and goal orientation that includes both state and trait anxiety. In their model, trait-like test anxiety predicts avoidance goal orientations, while state anxiety mediates the effect of performance avoidance goals on exam performance.

The current study examines state and trait anxiety. This is consistent with the fact that goal orientation can be a state or trait construct. On one hand, as Murphy and Alexander (2000b) state, ‘‘one’s stance towards academic tasks constitutes a stable, enduring characteristic of his or her personality” (p 41). On the other hand classroom situations and experimental conditions influence goal orientations, suggesting a more state like quality. Pintrich (2000b) paralleled goal orientations to the general principle in personality and social psychology in which certain contexts (such as strong competitive classroom environments) can “overwhelm” normally accessible traits (such as goal orientation). Without strong environmental cues, however, traits may influence behaviour more.

If affect plays an important role in a person’s goal orientation, then there are important implications for practical applications and the direction of future studies. For example, previous research has found that classroom environments can promote mastery goals or performance goals with very different educational outcomes (Ames, 1992);

intervention studies that promote mastery goals in the classroom have had promising results (Linnenbrink, 2005). However, it may also be necessary to reduce anxiety and depressive symptoms in order to promote desirable goal states and orientations. If this is the case, overcoming maladaptive goal patterns may require more than classroom restructuring; it will require direct attention to students' affective states.

Table 2.
Research Articles that Address Affect & Goal Orientation *(continued on next page)*

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
1. Baer, Grant & Dweck (2003, unpublished) *Personal goals predict the level and impact of dysphoria - Study 1*	Dysphoria (CES-D)	Design: Cross sectional Analysis: Linear regression	Undergraduate students (N=94) (Columbia Univ.)	Self-growth self-validation) (GOI)	• Seeking validation positively predicts dysphoria in the face of setbacks
2. Baer, Grant & Dweck (2003, unpublished) *Personal goals predict the level and impact of dysphoria - Study 3*	Depressive affect (MI) Agitation affect (MI)	**Design**: Experimental **Analysis**: ANOVAs IV - Goal type x feedback DV - task performance **Covariate:** affect	Undergraduate students (N=61) (Columbia Univ.)	Self-growth vs. Self-validation	• Students with growth goals, who experience an increase in negative affect after a set back perform better on a subsequent trial (i.e. negative affect helped them) • Students with validation goals who experience an increase in negative affect after a setback did not perform better (i.e. negative affect did not help them)
3. Dickson (2006) *Perceived consequences underlying approach goals and avoidance goals in relation to anxiety*	Anxiety (HADS)	Design: Experimental, cross-sectional, mixed model Analysis: ANOVA IV - Anxious status DV - goal type	Anxious (N=41) non anxious (N=33) undergraduate students (Royal Holloway University of London)	Approach vs.Avoidance (The Goals Task)	• The anxious group generated more avoidance goals than the non-anxious $F(1, 72) = 10.63$, $p < .01$ • Groups did not differ significantly on the number of approach goals generated
4. Dickson & MacLeod (2004a) *Anxiety, depression and approach and avoidance goals*	Anxiety (HADS) Depression (HADS)	**Design**: Cross-sectional **Analysis**: Simple correlations	16-18 year old students from 2 secondary colleges in Australia	Approach vs. Avoidance (AGQ)	• Depression negatively correlated with approach motivation ($r = -.21$) • Depression unrelated to avoidance motivation. • Anxiety positively correlated with avoidance motivation ($r = .17$)
5. Dickson & MacLeod (2004b) *Approach and avoidance goals and plans: Their relationship to anxiety and depression*	Depression (BDI) Anxiety (BAI)	Design: Experimental Analysis: ANOVA IV **:** Depression x anxiety DV**:** goal type	Secondary school students(N=112) in Perth, Australia	Approach vs Avoidance (The Goals Task)	• High depression and mixed depression/anxiety adolescents generated fewer approach goals, but not more avoidance goals, than controls. • High anxiety adolescents generated more avoidance goals (but not fewer approach goals) than controls.

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
6. Dickson & MacLeod (2006) *Dysphoric adolescents' causal explanations and expectancies for approach and avoidance goals*	Depression (BDI)	Design: Experimental Analysis: ANOVA & ANCOVA IV - Depression status DV - goal type	dysphoric (N=28) non dysphoric (N=28) 16-18 year old Australian students	Approach vs Avoidance (The Goals Task)	• Dysphoric adolescents generated more avoidance goals and less approach goals than non-dysphoric adolescents
7. Dykman (1998) *Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach - Study 1*	Depression (BDI) Depression-Proneness (DBRS) Interaction Anxiety (IAS) Fear of Failure (FFS), Trait Anxiety (EMAS-T)	Design: Cross-sectional Analysis: Simple correlations	undergraduate students(N=300)	Self-growth vs Self-validation (GOI)	• Validation goals (performance) positively correlated with depression (*r* = .38), depression proneness (r=.49), & all measures of anxiety (r=.19-.50) • Growth goals (mastery) negatively correlated with depression (r=-.36), depression proneness (r=-.50), & all measures of anxiety (*r* =-.38--.48).
8. Dykman (1998) *Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach - Study 2*	Anticipatory Anxiety (questionnaire rating anticipatory anxiety across 10 adjectives)	Design: Experimental Analysis: ANOVA IV - Anticipatory anxiety DV - Goal type	undergraduate psychology students(N=103)	Self-growth vs Self-validation (GOI)	• In anticipation of an ego-threatening event, students with validation goals experienced more anxiety than students with growth goals.
9. Dykman (1998) *Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach - Study 5*	Depression (BDI)	Design: Longitudinal, Survey (7 weeks) Analysis: Hierarchical multiple regression	Undergraduate; N=104 at T1, N=68 at T2	Self-growth vs Self-validation (GOI)	• As stress increased, students with validation goals experienced greater increase in depression at T2 than students with growth goals

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
10. Elliot & McGregor (1999) *Test Anxiety and the Hierarchical Model of Approach and Avoidance Achievement Motivation - Study 1*	State test anxiety (STAI-S, adapted to be specific for exams) Worry & emotionality (WES-R)	Design: Analysis: Hierarchical linear modeling	undergraduate psychology class (N=150) (University of Rochester)	Mastery Performance-approach Performance-avoid (AGQ)	• Students with performance-avoid goals experienced higher state test anxiety $F(1, 142) = 27.50$, $p < .0001$ (β=.43), & worry & emotionality $F(1, 139) = 16.73$, $p < .0005$ (β=.35) • Performance approach and mastery goals were unrelated to test anxiety and worry & emotionality • State test anxiety and worry (but not emotionality) mediated the relationship between performance avoid goals and exam performance
11. Elliot & McGregor (1999) *Test Anxiety and the Hierarchical Model of Approach and Avoidance Achievement Motivation - Study 2*	Trait test anxiety (TAI) State test anxiety (STAI-S) Worry & emotionality (WES-R)	Design: Analysis: Hierarchical linear modeling	undergraduate students(N=172) in a psychology class at Rochester University	Mastery Performance-approach Performance-avoid (AGQ)	• Trait test anxiety was a positive predictor of both performance-approach (β= .33$p < .0001$) and avoid goals (β = .54, $p < .0001$) • Performance avoid goals were positively related with higher state test anxiety $F(1, 154) = 36.51$, $p < .0001$ (β=.44), worry $F(1, 157) = 23.45$, $p < .0001$ (β = .37), & emotionality $F(1, 165) = 30.16$, $p < .0001$ (β= .40) • Performance approach goals were positively related to emotionality $F(1, 165) = 4.28$, $p < .05$ (β= .15) and unrelated to worry and state test anxiety • Mastery goals were negatively related to worry $F(1, 157) = 4.06$, $p < .05$ (β= -.15) and unrelated to state test anxiety and emotionality
12. Elliot & Sheldon (1997) *Avoidance Achievement Motivation: A Personal Goals Analysis*	Fear of failure (DAS) Positive and negative affect (PANAS)	Desigin: Analysis: Simple correlations, multiple regression, stepwise multiple regression, path analysis	undergraduate psychology class (N=145) (University of Rochester)	Avoidance (AGQ)	• High fear of failure scores were associated with a greater number of avoidance goals ($r = .33$, $p < .001$) • Avoidance goals predicted negative (β= -.29, $p < .01$) and positive (β= .24, $p < .01$) affect at the end of the semester

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
13. Elliot, Sheldon, & Church (1997) *Avoidance personal goals and subjective well being*	Subjective well being (PANAS)	Design: Analysis: Simple correlations, multiple regression, path analysis	Undergraduates psychology class in the U.S.A. (N=166)	Avoidance personal (PSA)	• Avoidance goals negatively correlated with subjective well being (r=-.24, $p < .005$), • This relationship was mediated by perceived progress
14. Etten, Pressley, Freebern, & Echevarria (1998) *An interview study of college freshmens' befliefs about their academic motivation*	Anxiety & worry (interview)	Design: Interview Analysis: Qualitative	First year students (N=206) from 2 competitive universities in the northeastern United States	Greater academic motivation vs Distraction away from learning	• Mild anxiety and worry about the need to study were associated with greater academic motivation, while high anxiety motivated distraction away from learning
15. Kaplan & Maher (1999) *Achievement Goals and Student Well-Being*	School related affect (PNASS)	Design: Cross-sectional Analysis: Multiple regression	6th grade students in Michigan (N=168)	Task Ability/Ego (adapted PALS)	• Task goals positively predicted affect at school (β= .18, $p < .05$) • Ability goals negatively predicted affect at school (β= -.23, $p < .01$)
16. Kasser and Ryan (1996) *Further examining the American dream: Differential correlates of intrinsic and extrinsic goals*	Anxiety (HSCL – anxiety subscale Depression (CESDI)	Design: Cross Sectional Analysis: Hierarchal regression	adults (N=100) undergraduate students(N=192)	Intrinsic Extrinsic (AI)	• Importance & likelihood of intrinsic goals negatively predicted depression in both the adult & university samples • Likelihood of extrinsic goals positively predicted depression & anxiety in both the adult & university samples • Importance of extrinsic goals positively predicted depression (but not anxiety) in the adult sample only

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
17. Linnenbrink (2005) *The Dilemma of Performance-Approach Goals: The Use of Multiple Contexts to Promote Students' Motivation and Learning*	Test Anxiety (MSLQ test anxiety scale) Negative & positive affect (adapted PANAS)	Design: Quasi-experimental Analysis: MANCOVA IVs: Classroom goals, personal goals DV: Emotional well being	Upper elementary students from a Midwestern city (N=237).	Mastery Performance approach Combined mastery & performance-approach (Classroom – experimental manipulation of goals & feedback) (Personal – PALS)	• No time X classroom goal condition effects on emotional well being • Students with high mastery goals at the pretest reported higher levels of positive affect, $F(1, 199) = 9.74$, $p < .01$ and lower levels of negative affect, $F(1, 199) = 15.13$, $p < .001$, but did not differ in terms of test anxiety, $F(1, 199) = 0.84$, $p < .05$ • Students with performance-approach goals at the pretest reported higher levels of positive affect, $F(1,199) = 7.47$, $p < .01$, but also higher levels of test anxiety, $F(1, 199) = 4.15$, $p < .05$ • Performance approach goals were not significant predictors of negative affect
18. McGregor & Elliot (2002) *Achievement Goals as Predictors of Achievement-Relevant Processes Prior to Task Engagement - Study 1*	Threat affect (worried, fearful, & anxious) (TAS)	Design: Longtudinal (prospective cohort) Analysis: Multiple regression	undergraduate psychology class in a northeastern American university(N=150)	Mastery Performance approach Performance avoid (AGQ)	In anticipation of exam stress: • Performance-avoidance goals were positive predictors, $F(1, 144) = 57.01$, $p < .01$ • Mastery and performance-approach goals were unrelated to threat affect.
19. McGregor & Elliot (2002) *Achievement Goals as Predictors of Achievement-Relevant Processes Prior to Task Engagement - Study 2*	Threat affect (worried, fearful, & anxious) (TAS)	Design: Longtudinal (prospective cohort) Analysis: Multiple regression	undergraduate psychology class in a northeastern American university(N=174)	Mastery Performance approach Performance avoid (AGQ)	When actually studying for an exam: • Performance-avoidance goals $F(1, 166) = 63.60$, $p < .01$ and performance-approach goals, $F(1, 166) = 10.40$, $p < .01$ were positive predictors of threat affect. • Mastery goals were unrelated to threat affect
20. McGregor & Elliot (2002) *Achievement Goals as Predictors of Achievement-Relevant Processes Prior to Task Engagement - Study 3*	Anticipatory test anxiety (STAI-S)	Design: Short term longitudinal Analysis: Multiple regression	undergraduate psychology class in a northeastern American university(N=177)	Mastery Performance approach Performance avoid (AGQ)	• Performance-avoidance goals were positive predictors of anticipatory test anxiety at time 1 $F(1, 151) = 24.22$, $p < .01$ and time 2 $F(1, 157) = 21.73$, $p < .01$ • Mastery and performance-approach goals were unrelated to test anxiety at both times
21. Middleton & Midgley (1997)- *Avoiding the Demonstration of Lack of Ability: An Underexplored Aspect of Goal Theory*	Test Anxiety (adapted MSLQ)	Design: Cross-sectional Analysis: Hierarchical regression	) 6th grade studentsin Michigan(N=703	Task Performance approach Performance avoid (PALS)	• Performance approach goals were weak predictors ($\beta = .12$, $p < .05$) and performance avoid were strong predictors ($\beta = .32$, $p < .001$) of test anxiety. • Master goals were unrelated to test anxiety

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
22. Pekrum, Elliot, & Maier (2006) *Achievement goals and discrete achievement emotions: A theoretical model and prospective test – Study 1*	Learning-related emotions experienced while studying: Anxiety, hopelessness, & shame (AEQ)	Design: Longtudinal (prospective cohort) Analysis: Simultaneous Multiple regression)	German undergraduate students(N=187)	Mastery Performance approach Performance avoid (AGQ)	• Performance avoidance goals were positive predictors of anxiety (β=.43, $p < .01$) and although not significant, a trend in predicting hopelessness (β=.20, $p = .12$), and shame (β=.20, $p <= .13$). • Performance approach and mastery goals were unrelated to anxiety, hopelessness, and shame
23. Pekrum, Elliot, & Maier (2006) *Achievement goals and discrete achievement emotions: A theoretical model and prospective test – Study 2*	Class-related emotions experienced while in their classes: Anxiety, hopelessness, & shame (AEQ)	Design: Longtudinal (prospective cohort) Analysis: Simultaneous Multiple regression)	undergraduate psychology class in the United States (N=225)	Mastery Performance approach Performance avoid (AGQ)	• Performance avoidance goals were positive predictors of anxiety (β=.20, $p < .05$) and hopelessness (β=.24, $p < .05$), but were unrelated to shame. • Performance approach and mastery goals were unrelated to anxiety, hopelessness, and shame
24. Pintrich, (2000b) *Multiple Goals, Multiple Pathways: The Role of Goal Orientation in Learning and Achievement*	Test anxiety (adapted MSLQ) Negative & positive affect (adapted PNASS)	Design: Longitudinal experimental Analysis: Repeated measures ANOVA IV: Goal orientation DV: Affect	8th & 9th grade students in math (N=150)	Mastery vs Performance approach (adapted PALS)	• No significant difference on test anxiety or negative affect over time for mastery, performance approach, or their interaction
25. Roeser, Midgley, & Urdan (1996) *Perceptions of the School Psychological Environment and Early Adolescents' Psychological and Behavioral Functioning in School: The Mediating Role of Goals and Belonging*	School-related affect (PNASS)	Design: Cross-sectional Analysis: Sequential regressions	6th & 8th grade students in the United States (N=289)	Personal relative ability Personal task (PALS)	• Personal task goals were positively correlated to positive school affect (r=.46, *p <.01)* • No other significant direct correlations were found between goal orientations and affect
26. Seifert (1995) *Academic goals and emotions: A test of two models*	Perceived ability Negative & positive emotions (motivation questionnaire)	Design: Cross-sectional Analysis: Structural equation modeling	5th grade students from eastern Canada(N=79)	Mastery Performance (motivation questionnaire)	• Feelings of competency were predictive of mastery orientation • Negative emotions were predictive of a performance orientation • Model in which emotions predict goal orientations was a better fit than the reverse

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
27. Sideridis (2005) *Goal Orientation, Academic Achievement, and Depression: Evidence in Favor of a Revised Goal Theory Framework - Study 1: Goal orientation and psychopathology*	Depression (CDI) Anxiety (RCMAS) Negative affectivity (PANAS-C)	Design: Cross-sectional Analysis: Simple correlations	5th & 6th grade students in Greece (N=214)	Mastery Performance approach Performance avoid Multiple (mastery & performance approach) (combinations of AGQ, PALS, CSGOI & TEOS)	• Performance avoid correlated positively with anxiety (r=.282, *p <.01)* & depression (r=.205, *p <.01)* • Mastery correlated negatively with anxiety (r=.197, *p <.01)* & depression (r=.290, *p <.01)* • Multiple goals correlated negatively with depression (r=-.278, *p <.01)*
28. Sideridis (2005) *Goal Orientation, Academic Achievement, and Depression: Evidence in Favor of a Revised Goal Theory Framework - Study 2: Goal orientation and anticipated negative affect*	Prior to a challenging task : Negative affectivity (PANAS-C)	Design: Experimental Analysis: ANCOVA IV: Goal orientation DV: Negative affectivity Covariate: Trait negative affect	5th & 6th graders(N= 116)	Mastery Performance approach Performance avoid (combinations of AGQ, PALS, CSGOI & TEOS)	• No main effects of goal orientation grouping
29. Sideridis (2005) *Goal Orientation, Academic Achievement, and Depression: Evidence in Favor of a Revised Goal Theory Framework - Study 3: Goal orientation & post-task affectivity & anxiety*	Following a challenging task: Anxiety (RCMAS) Negative affectivity (PANAS-C)	Design: Experimental Analysis: ANCOVA IV**:** Goal orientation DV: Negative affectivity Covariate: Trait negative affect	5th & 6th graders(N=130)	Mastery Performance approach Performance avoid (combinations of AGQ, PALS, CSGOI & TEOS)	• No main effects of goal orientations on affectivity • Mastery students were more anxious than performance avoid students
30. Sideridis (2005) *Goal Orientation, Academic Achievement, and Depression: Evidence in Favor of a Revised Goal Theory Framework - Study 5: Goal orientations & self regulation*	Depression (CDI) Anxiety (RCMAS) Negative affectivity (PANAS-C)	Design: Experimental (cross-section) Analysis: Structural equation modeling	5th & 6th graders(N=377)	Mastery Performance approach Performance avoid Multiple (combinations of AGQ, PALS, CSGOI & TEOS)	• Mastery goals had a negative effect on anxiety (-.163), negative affect (-.132) & depression (-.194) • Multiple goals had a negative effect on anxiety (-.095), negative affect (-.053) & depression (-.131) • Performance avoid had a positive effect on anxiety (.371), negative affect (.271) & depression (.319). • Performance approach had a negligible effect on these factors

Study (Author & Title)	Affect & instrumentation	Design & Analysis	Sample	Goal Framework	Findings related to goal orientation
31. Skaalvik (1997) *Self-Enhancing and Self-Defeating Ego Orientation: Relations With Task and Avoidance Orientation, Achievement, Self-Perceptions, and Anxiety*	Anxiety (2 self-report anxiety scales for math & verbal))	Design: Corss-sectional Analysis: Multiple regression	6th- and 8th-grade Norwegian students(N=253)	Task Avoid Self defeating ego Self enhancing ego (GOS)	• Self-defeating ego orientation positively predicted anxiety in math (β=.27, $p < .001$) and language classes (β=.28, $p < .001$) • Self-enhancing ego orientation and task orientation negatively predicted anxiety in math classes (β=-.16, $p < .05$ for both) and was not significantly related to anxiety in language classes. • Avoid orientation positively predicted anxiety in language classes (β=.16, $p < .05$)
32. Turner, Thorpe, & Meyer (1998) *Students' reports of motivation and negative affect; a theoretical and empirical analysis*	Negative affect after failure (SFT)	Design: Cross-sectional Analysis: Cluster analysis, path analysis	5th & 6th grade students in Pennsylvania (N=160)	Learning vs Ability (PALS)	• High learning goal & low ability goals resulted in lower negative affect after failure • High ability goals & low learning goals resulted in higher negative affect after failure • Ability goals positively effected negative affect after failure (.45, t (130) = 5.77)
33. Zusho, Pintrich, & Cortina, (2005) *Motives, goals, and adaptive patterns of performance in Asian American and Anglo American students*	Anxiety (MSLQ)	Design: Cross-sectional Analysis: Simple correlations, structural equation modelling	Asian American (N=105) & Anglo American (N=98) undergraduate psychology class in the United States	Mastery Performance approach Performance avoid (PALS)	• Performance avoidance goals positively effected with anxiety (.61) • Performance approach and mastery goals were unrelated

Many studies reviewed reported other variables not pertinent to the objectives of this study. As such, they were not included in this table.

CES-D – Center for Epidemiological Studies Depression Scale (Radloff, 1977)
MI – Mood Inventory (Baer, Grant & Dweck, 2003)
HADS - The Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983)
DBRS - Depression-Proneness Rating Scale (Zemore, Fischer, Garratt, & Miller, 1990)
IAS - Interaction Anxiousness Scale (Leary, 1983)

FFS - Fear of Failure Scale (Dykman, 1998)

EMAS-T - Endler Multidimensional Anxiety Scales-Trait form (Endler, Edwards, Vitelli, & Parker, 1989)

AGQ – The Achievement Goals Questionnaire (Elliot & Sheldon, 1997)
PANAS – Positive and Negative Affect Schedule (D. Watson, Clark, & Tellegen, 1988)
DAS – Debilitating Anxiety Scale (Alpert & Haber, 1960)

BAI – Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988)
GOI – Goal Orientation Inventory (Dykman, 1998)
AGQ – Achievement Goal Questionnaire (Elliot & Church, 1997b)
WES-R – Revised Worry-emotionality Scale (L. W. Morris, Davis, & Hutchings, 1981)
TAI – Test Anxiety Inventory (Spielberger, Gonzalez, Taylor, Algaza, and Anton, 1978)
PSA – Personal Strivings Assessment (Elliot et al., 1997)
PNASS - Positive & Negative Affect at School Scales (Wolters, Garcia, & Pintrich, 1992)
HSCL – Hopkins Symptom Checklist, Anxiety Subscale (Derogatis, 1974)
AI (Aspiration Index) (Kasser & Ryan, 1993)
MSLQ – Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1993)
TAS – Threat Affect Scale (Folkman & Lazarus, 1985)
AEQ - Achievement Emotions Questionnaire (Pekrun, Goetz, Titz, & Perry, 2002)
CSGOI – Children's Sport Goal Orientations Inventory (Lewthwaite & Piparo, 1993)
TEOS – Task and Ego Orientation Scales (Thorkildsen & Nicholls, 1998)
RCMAS - Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1978)
GOS – Goal Orientation Scales (Skaalvik, 1997)
SFT – The School Failure Tolerance Scale (Clifford, 1988)

Perceived Competence and Goal Orientation

Perceived competence refers to subjective judgments concerning one's ability to perform effectively in a given area or situation (Ames & Ames, 1984). Research on perceived competence and motivation has typically used scales of intrinsic and extrinsic motivation. Cross-sectional studies have generally found that higher perceptions of competence are conducive to higher intrinsic motivation (Harter, Whitesell, & Kowalski, 1992; Losier & Vallerand, 1994; Vallerand & Reid, 1984). For example, Wong, Wiest, and Cusick (2002), in a series of regression analyses, found that perceived competence was the strongest, or sole predictor of motivational orientation for sixth ($\beta = .338$, $p < .01$) and ninth ($\beta = .449$, $p < .01$) grade students. It's important to note that Harter used intrinsic versus extrinsic motivation in the classroom as the measure of motivational orientation, not the trichotomous goal perspective discussed in this proposal; however, a central characteristic of mastery goals is their intrinsic worth, and likewise, extrinsic measures of worth are a central characteristic of performance goals. Wong et al.'s (2002) data clearly suggests that perceived competence contributes to a student's choice of intrinsic versus extrinsic goals, highlighting the importance of perceived competence on motivation.

Some studies have examined perceived competence's contribution to performance and mastery goal orientations. Seifert (1995), examined the perceived competence of 5th grade students and found that feelings of competence positively predicted mastery orientation ($\beta = .33$). This finding is consistent with work on self-efficacy, which research has consistently found to be important in skill attainment (Jourden, Bandura, & Banfield, 1991; Schunk & Swartz, 1993). On the other hand, Seifert (1995) found no

relationship between perceived competence and performance goals. As Seifert pointed out, however, this may be due to the lack of distinction between approach and avoid performance goals. Seifert urged future studies to subdivide performance goal orientations.

Elliot and Church (1997) did examine perceived competence in university students as a predictor of multiple goals. High performance expectations measured at the beginning of the semester predicted greater adoption of both mastery and performance-approach goals and lower adoption of a performance-avoidance goal, measured 2 weeks later. Other studies have also found positive correlations between perceived competence and mastery and performance approach goals, and negative correlations between perceived competence and performance avoid goals (Elliot, 1999; Turner, Thorpe, & Meyer, 1998).

Senko and Harackiewicz (2005) performed both naturalistic and laboratory studies and found that negative competence feedback reduced mastery goal orientations, indicating a causal relation between perceived competence and goal orientation. This study was conducted with a school-age population, and since understanding of competence feedback and perceived competence is a developmentally sensitive construct (Roeser, Eccles, & Freedman-Doan, 1999; Wigfield, Eccles, Mac Iver, & Reuman, 1991), these findings need to be replicated with other age groups..

As well as contributing to research on perceived competence, findings of this study have practical applications. If, as hypothesized, perceived competence positively predicts mastery and performance approach orientations, and negatively predicts performance avoid orientation, then it is important to provide students with an

environment in which their sense of competence is maintained or enhanced. Specifically, students who believe that they "can do it" may try harder to do well and as a result, perform at a higher level. To that end, how educators respond to students, whether optimal challenge is provided, and the extent to which mastery versus performance goals are encouraged may be important experiences for students' perceptions of competence.

Gender Differences

Studies examining gender differences in goal orientations have had mixed results. For example, some research by Henderson and Dweck (1990) showed gender differences, with females being more performance oriented than males. Contrary to these findings, other studies suggest that male adolescents are more oriented to performance goals and less oriented to mastery goals than female adolescents (Anderman & Midgley, 1997; Pajares, Britner, & Valiante, 2000). Other research (Meece & Miller, 2001; Middleton & Midgley, 1997) has found that gender differences existed only in work-avoidant goals, with boys adopting them more strongly than did girls.

A recent study by Long, Monoi, Harper, Knoblauch, and Murphy (2007) suggests that gender differences may depend on developmental factors. In their study of urban American adolescents (N=414) they found that 8th grade males tended to have stronger preferences for work-avoidant goals than females, and females tended to hold stronger mastery goals than males. Interestingly, these gender differences disappeared in high school. These findings could indicate a cross-gender developmental trend, however there is no current literature to support or refute this conclusion. Additionally this trend may be cultural, as the sample was predominantly (87%) African American, or contextual as the entire school district was categorized as being in a state of "academic emergency" due to

low proficiency levels in all subjects and grades.

Dowson, McInerney, and Nelson (2006) investigated school context and sex differences of 602 middle school students from four schools in Australia on motivational goal orientations. Although the classifications of goal orientations differ from this study, findings are relevant as the literature begins to examine sex differences in this area. A MANOVA revealed a significant overall interaction effect of school and sex on goal orientations ($F[16,82] = 5.68$, $p < .001$). Males reported stronger academic and social goals under competitive, performance-oriented conditions, whereas females reported stronger academic goals only under these conditions. Alternatively, under creative/cooperative and low-achieving conditions females reported stronger social goals, whereas males reported weaker academic and social goal orientations under these circumstances. These findings indicate that sex differences in students' goal orientations may need to be considered within each school context. Perhaps previous studies have shown inconsistent sex differences in students' goal orientations due to aggregation of data across schools, or differences in school contexts.

Despite the literature discussed there is no consensus on whether, or how, sex differences influence students' goal orientations. The current study proceeds cautiously, aware of the possibility of gender differences, and the developmental, cultural, and contextual trends accompanying them that may influence goal orientations.

Summary of Chapter Two

This chapter explored the literature on antecedents to goal orientations. The studies reviewed in this chapter indicate that depressive symptoms, anxiety, and

perceived competence are possible predictors of goal orientations. Inconsistent results on gender differences indicate that more research in this area is needed. The next chapter will outline the methodology of the current study of affect and motivational goal orientations in first year university students. .

Chapter Three: Methodology

Overview

This chapter outlines the research methodology for testing anxiety, a composite of depressive symptoms, and perceived competence as predictors of goal orientations. Included is a discussion of the sampling, instrumentation, and data analysis. As I was not involved in the collection of this data, I also discuss some of the issues involved in secondary data analysis.

Population & Sample

This study analyzes data collected from students in the University of Notre Dame's First Year of Studies program. Notre Dame is a Roman Catholic university located in north central Indiana. It has a strong academic reputation, ranking 20th nationally in undergraduate studies (U.S. News and World Report, 2007). Eighty-two percent of the student body self-identifies as Roman Catholic.

The age of this population should provide valuable information about affect and goal orientations. Late adolescence and emerging adulthood represent a time of significant transition and exploration of future life directions (Arnett, 2001). This provides a naturally rich context for studying goals because it is a time of significant planning (Dickson & MacLeod, 2006). Previous research has also shown that prevalence rates of clinical depression (Hankin et al., 1998), as well as depressed mood states (Petersen, Compas, Brooks-Gunn, & Stemmler, 1993) rise dramatically during this time.

Of the 196 participants, 59% were female and 41% were male. Seventy-eight percent were white, which is representative of the undergraduate population at the

university (University of Notre Dame, 2007). The homogeneity of this sample limits the study's multi-cultural representativeness. This is important to remember, as previous research has found ethnic differences in motivational goal orientation (Abu-Hilal & Darwish, 2005; Urdan, 2004). For example, a recent study of undergraduate students at a south eastern American university, found that white students scored significantly higher than Latino students on mastery goal orientation.

Participants were enrolled in the First Year of Studies program, to which all incoming students are admitted. The purpose of the First Year of Studies Program is to give students a year to choose their major, provide academic monitoring and guidance, and to ensure that all students meet the basic University course requirements in a timely manner. For some students, attending a competitive university for the first time is a challenging task (Feldman, 2005). Many students in this program are undecided about a major, or are discovering that they may not have the grades or motivation to earn the degree they hoped for when they were accepted at the university. For example, 6.6% of the students in this sample reported that their intended major was the Program of Liberal Studies; yet in the first semester, only 3.1% of these students were enrolled in this program. Similarly, the percent of students in this sample who reported their major as undecided actually rose between the intended major (10.7%) and first semester major. In fact, across intended majors, first semester majors, and second semester majors, 34% of students changed their minds once, and 9% changed their minds twice. This is an anxiety provoking situation (Gray & Rottmann, 1988; Hawkins, Bradley, & White, 1977). Dweck postulates that the differing patterns of behaviours her goal orientation model predicts should be greatest when students face challenging or difficult tasks (Dweck & Legget,

1988; Grant & Dweck, 2003). Consequently, determining the antecedents of these motivational beliefs is particularly important for this population.

Measures

Goal Orientation

The Patterns of Adaptive Learning Survey (PALS). The PALS was originally developed by Midgley and Maehr (1996) as an evaluation tool during their three-year study, which applied goal orientation theory to reform elementary and middle schools. The psychometric properties of the instrument were refined through several other longitudinal studies with middle school students (Midgley et al., 1998).

The PALS assesses a trichotomous achievement goal structure, containing reliable and valid measures of task (mastery) goal orientation, performance approach goal orientation, and performance avoid goal orientation (see Appendix A). Items on the PALS use five-point Likert-type scales, ranging from 1 = not at all true, to 5 = very true. The mastery goal orientation scale is a 6-item scale with high internal consistency (α=.86) that assesses the extent to which students engage in tasks in order to develop their competence. The performance approach goal orientation scale uses 6-items to investigate students feelings or wants, under specific learning situations (e.g., "I would feel successful in school if I did better than most of the other students"). This scale also has high internal consistency (α=.86). The performance avoidance goal orientation scale uses 6-items to assess students' desire to avoid demonstrating incompetence. Each item refers to the importance of or reasons behind behaviours during class (e.g., "The reason I do my school work is so my teachers don't think I know less than others"). Confirmatory factor analysis was conducted on the items to ensure discriminant validity, and the model

displayed good fit [χ^2 (116, N=647) = 298.55, p<.001; GFI=.95; TLI=.95; CFI=.96; RMSEA=.049, p(.05) =.55] (Midgley et al., 1998). Ross, Shannon, Salisbury-Glennon, and Guarino (2002), expanded this work by comparing the reliability and validity of the instrument across grade levels, and found that among a college population, the PALS remains an appropriate measure for making inferences about learning constructs at the college level. In numerous studies the PALS has also demonstrated good construct validity. For example, the goal orientation measures are related in expected ways to academic efficacy and adaptive/maladaptive learning strategies (see Anderman, Urdan, and Roeser, 2005 for a review).

Ross, Blackburn, and Forbes (2005) conducted a reliability generalization study on the PALS. They found the reliability coefficients of the PALS to be fairly consistent across the 267 studies they sampled (M=.77, SD=.07). The average reliability coeficients were .79 (SD=.05) for the mastery subscale, .79 (SD=.07) for the performance approach subscale, and .81 (SD=.04) for the performance avoid subscale.

Free-response data. In discussing future research needs, Dickson and MacLeod (2006) concede that an open-ended goal measure may elicit more naturally occurring "idiographic" goal responses. Therefore, this study conducts secondary data analysis of participants' free responses regarding their hopes and fears in their first year at university. Four teachers assist in coding these free responses as mastery, performance approach, or performance avoid oriented. Having teachers code this data serves several purposes. First, they are familiar with late adolescents making interpretation of the language consistent. Second, although the teachers are familiar with the population, they are not familiar with the theory of goal orientations. Consequently, the teachers took part in an information

session about the theory, thereby receiving the same instruction on the topic, reducing varied interpretations of the theory. Third, as a major application of these findings apply to how educators of late adolescents can better serve their students, the coding of this data is an opportunity to (a) educate 4 local teachers about goal orientations, their antecedents, and their outcomes and (b) provide educators with an insight into the hopes and fears of this population.

Depressive symptoms

The Beck Depression Inventory (BDI) is a widely used measure of depressive symptoms for adolescents and adults (Appendix B). Constructed in 1961, it has been employed in more than 2000 studies (Richter, Werner, Heerlein, Kraus, & Sauer, 1998). Beck highlighted the importance of negative cognitions of the world, the future, and the self in causing depression. Through clinical observations he noted symptoms and attitudes often displayed by depressed psychiatric patients, and not displayed by non-depressed psychiatric patients. These observations were systematically consolidated to create a measure of depressive symptoms. The resulting BDI is a 21-item self-report measure of depressive symptoms experienced in the past week. For each item there is a 4-point scale ranging in intensity from 0 (e.g. "I do not feel sad") to 3 (e.g. "I am so sad or unhappy that I can't stand it"). The instrument is at a 6^{th} grade reading level (Berndt, Schwartz, & Kaiser, 1983), and takes approximately 10 minutes to administer.

Beck, Steer, and Garbin (1988) conducted an extensive review of the psychometric properties of the BDI for the years 1961-1986. Through meta-analysis they found the internal consistency estimates to have a mean coefficient alpha of 0.81 for non-psychometric patients. Test-retest designed studies indicate a range of the Pearson

product-moment correlation coefficient from 0.60 to 0.83. Concurrent validity of the BDI is high, demonstrating strong positive relationships to other measurements of depression such as clinical assessments, The Hamilton Psychiatric Rating Scale for Depression, The Zung Self-reported Depression Scale, and the Minnesota Multiphasic Personality Inventory Depression Scale. The BDI also displays strong construct validity, as it detects a variety of proposed relationships between depressive symptoms and selected attitudes and behaviours such as adjustment, social desirability, suicide, alcoholism, anxiety, and sleep patterns.

Although the BDI demonstrates adequate internal consistency, test-retest reliability, construct validity, and factorial validity, there have been some criticisms regarding its content validity, as it covers only six of nine diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (Dozois, Dobson, & Ahnberg, 1998). The BDI does not include questions about the increase in appetite or sleep. Steer and Beck (1985) maintains this was deliberate, as it also occurs in non-depressed subjects, so their inclusion may produce false positives. Psychomotor activity and agitation, a DSM criteria absent from the BDI, was not deemed suitable for a self-report measure, as it is a clinically observable sign (Beck, Steer, & Garbin, 1988).

There are some criticisms surrounding the use of self-report inventories in the assessment of mood disorders. For example, depressed individuals often perceive things in a hopeless manner; therefore, they are more likely to respond negatively on a self-report measure, regardless of the severity of their current state (Zimmerman & Coryell, 1994). Despite these limitations, given the convenience of the measure and strong reliability and validity data, the BDI is a useful instrument to identify the presence and

severity of depressive symptoms.

Anxiety

State anxiety is a transient condition of unpleasant perceived feelings of tension, apprehension, and nervousness that vary in intensity and duration as a reaction to situations that are perceived as threatening; whereas trait anxiety refers to relatively stable individual differences that are impervious to situational stress (Novy, Nelson, Goodwin, & Rowzee, 1993). The State-Trait Anxiety Inventory (STAI; Spielberger, Grosuch, & Lushene, 1970; Spielberger & Rogelio, 1983) was developed to provide a reliable and brief self-report measure of these two anxiety constructs. The scale consists of 40 items written at a fifth or sixth grade reading level. Twenty items assess trait anxiety asking respondents to indicate the intensity of their feelings *at this moment* (e.g. "I feel calm") using a 4-point likert scale of: (a) not at all, (b) somewhat, (c) moderately so, and (d) very much so. Twenty items assess state anxiety asking respondents to indicate how frequently they *generally* feel (e.g. "I feel tense") using a 4-point likert scale of: (a) almost never, (b) sometimes, (c) often, and (d) almost always. Ten of the trait anxiety items and seven of the state anxiety items are stated such that anxiety is present (e.g. "I feel nervous") with the remainder being stated such that anxiety is absent (e.g. "I feel content"). Generally it takes less than 15 minutes to complete the inventory.

Reliability and validity data lend good support for the measure. Test re-test reliability was high for the trait anxiety scale (.86 for males and .73 for females) (Spielberger, Gorsuch, & Lushene, 1970). Although test re-test reliability for the state anxiety scale is low (.54 for males and .27 for females) (Spielberger, 1970), this is actually as expected, as the scale measures the intensity of feelings of anxiety at a

particular moment in time. Internal consistency was found to be high for the trait-anxiety (α=.86-.92) and for state-anxiety (α=.83-.92) for male and female high school and college students (Hishinuma et al., 2000). The instrument demonstrates construct validity in that the state anxiety items consistently vary with differing experimental conditions of stress, while the trait anxiety items do not. Further, concurrent validity with other trait anxiety measures, such as the Taylor Manifest Anxiety Scale and the Institute for Personality and Ability Testing Anxiety Scale, is between .75 and .85 for college students (Hedberg, 1972).

The STAI is "the most widely used devise to measure anxiety across cultures" (Lonner & Ibrahim, 1996, p.317). Although, as with any self-report instrument, it as some inherent weaknesses, assessments of the STAI are favourable (Guthrie & Lonner, 1986). Strengths include being brief, inexpensive, easy to administer, score, and interpret, and its significant conceptual distinction between state and trait anxiety. In the literature, one of the greatest weaknesses of the instrument is the limitation of being developed and tested using high school, pre-college, and college samples (Hedberg, 1972). As this study analyzes data from first year college students, this should not be a drawback.

Perceived Competence

Perceived competence and self-concept are often used interchangeably in the educational psychology literature. There are subtle distinctions in how these terms are used. Self concept is typically used to represent one's general perceptions of the self, while perceived competence is often more domain specific, representing one's perceptions of self as competence in specific domains or situations.. When these terms are used in reference to a specific domain or situation, for example, academic self-

concept or perceived academic competence, it is difficult distinguish between the two concepts. In the present study I will use the term "perceived academic competence."

The SDQ-III (Appendix C) is a 136-item self-report instrument based on Shavelson's (1976) model designed to measure 13 subscales of self-concept for a late adolescent or college age population. The 13 subscales include 3 for academic self-concept (mathematics, verbal, and general school), which are used in this study to measure academic perceived competence. Marsh and O'Niell (1984) found that math and verbal achievement scores were highly correlated with self-concepts in matching areas, less correlated with other academic self-concepts, and uncorrelated with non-academic self-concepts. Half of the items are positively worded, and half of the items are negatively worded, with negatively worded items reverse scored so that higher values represent higher levels of self-concept. Responses are on an 8-point rating scale ranging from "definitely false" to "definitely true."

Internal consistency reliability coefficients range from .86 to .93 for each of the academic subscales and the SDQ-III shows strong support for construct validity (Marsh & O'Neil, 1984). Exploratory factor analysis by Byrne and Shavelson (1986) resulted in the four clearly defined factors of General, Mathematics, English, and Academic Self Concepts. Although, originally developed and tested with an Australian sample, the SDQ-III has since proved valid and reliable with a North American adolescent sample (Byrne, & Shavelson, 1986).

Byrne (1996) conducted an exhaustive review of popular self-concept instruments and concluded that the SDQ-III was the most psychometrically sound measure currently available for young adults, stating that researchers can "feel confident in the validity of

interpretations that are based on responses to the SDQ-III's multidimensionally sensitive items" (p. 204).

Procedure

In September 1999, 300 first year students were sent a consent form describing the study as "a study of emotional and motivational adjustment" and inviting them to participate. Students who responded received a phone call to arrange an appointment for testing. Those who did not respond were contacted by phone to invite them to participate once again.

Beginning each testing appointment, the experimenter described the purpose of the study as outlined in the consent letter (Appendix D), followed by confidentiality details, and then provided the participant with a confidential ID number to link the demographic information of the participant to the psychological data. Participants then completed the Self Descriptive Adjectives instrument and then, with the experimenter, the Competence Concerns Personal Stroop (not analysed in this study). After this, participants were given a battery of self-report questionnaires (SDQ-III, BDI, Automatic Thoughts Questionnaire, PALS, and STAI). Once the questionnaires were completed, students' filled out an additional consent form, indicating whether or not they wanted their BDI and PALS scores released to their First Year of Studies academic advisor. Students received $5.00 for their participation. Sixty-three students participated in this process.

At the beginning of the spring semester, the same recruitment and testing procedures were conducted. One hundred thirty-five students consented and participated in this procedure over the semester.

Data Analysis

Multiple Regression

The current study uses multiple-regression analysis to test a model in which affective and competence variables predict goal orientation. Data is initially screened for missing values, outliers, distribution characteristics, and linearity. The predictor variables, depressive symptoms, anxiety, and perceived competence, are also screened for multicollinearity. The regression analyses are then conducted, followed by regression diagnostics to check assumptions are met.

Regression analyses are statistical techniques that provide the researcher a means of assessing the relationship between the criterion variable and several predictor variables (Creswell, 2005). The flexibility of regression techniques is particularly useful for researchers investigating real-world, practical problems that may not be conducive to laboratory settings (Tabachnick & Fidell, 2001).

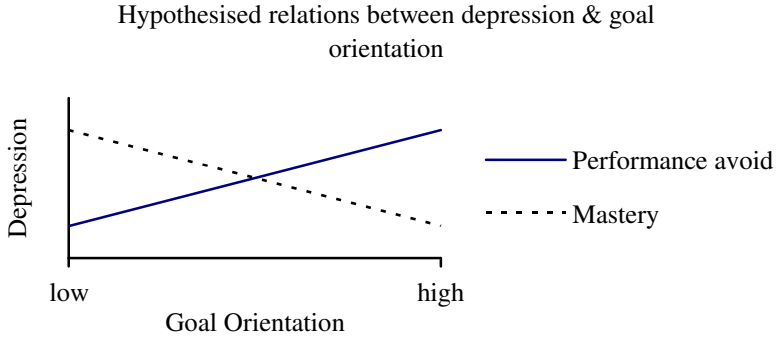
In multiple-regression models, two or more predictor variables combine to predict a value on a criterion variable. Regression analyses produce an equation representing the best prediction of the criterion variables from several predictors. The ultimate goal of this statistical procedure is to arrive at the set of regression coefficients for the predictors that bring the criterion values predicted from the equation as close as possible to the criterion obtained by measurement. The regression coefficients minimize the deviations between predicted and obtained criterion values and optimize the correlation between the predicted and obtained criterion values for the data set (Tabachnick & Fidell, 2001).

Three major types of multiple regression exist: (1) standard multiple regression; (2) sequential or hierarchal regression; and (3) statistical or stepwise regression. This

study utilizes a standard multiple regression, which allows the researcher to enter all predictor variables into the equation at once. Regression analyses assess each predictor variable as if it had become part of the regression model after all predictor variables had entered. In other words, each predictor is evaluated based on what it adds to the prediction of the criterion that is different from the predictability afforded by all other predictors (Tabachnick & Fidell, 2001).

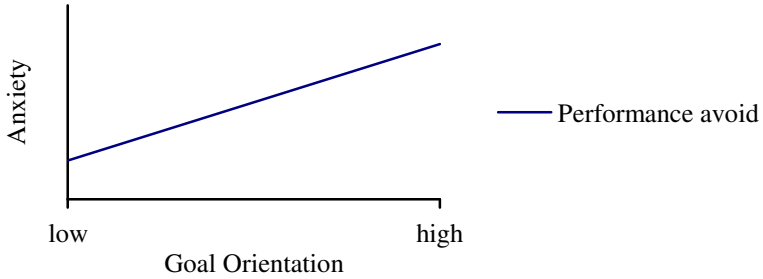
Although regression analyses uncover relationships among variables, and the word prediction is used to discuss the model the regression analysis is being used to test, the results of a regression analysis do not imply causality. Demonstration of causal relationships is a logical and experimental problem, rather than a statistical problem (Tabachnick & Fidell, 2001). A relationship between the criterion variable and predictor variables may be discovered; however, this relationship may be the result of numerous factors, including unmeasured variables. As such, it is essential that results be interpreted with caution.

Hypotheses. The graphs below represent the expected significant relations between the predictor variables and goal orientations.



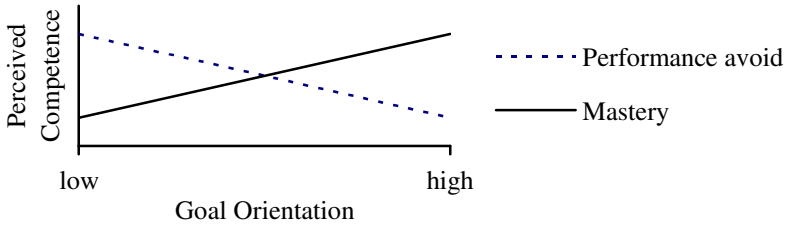
It is hypothesized that depressive symptoms will be a negative predictor of mastery orientation, a positive predictor of performance avoid orientation, and unrelated to performance approach orientation.

Hypothesised relations between anxiety & goal orientation



It is hypothesized that anxiety will be a positive predictor of performance avoid orientation and unrelated to mastery and performance approach orientation.

Hypothesised relations between perceived competence & goal orientation



It is hypothesized that perceived academic competence will be a positive predictor of mastery orientation, a negative predictor of performance avoid orientation, and unrelated to performance approach orientation.

Secondary Data Analysis

Secondary data analysis involves the analysis of existing datasets, whereas primary data analysis involves both data collection and analysis (Kiecolt & Nathan, 1985). There are several advantages to using secondary data analysis, which may account

for its increasing popularity among social scientists. Researchers can save time, money and resources by using existing datasets (Hyman, 1972; Kiecolt & Nathan. 1985). Through secondary data analysis, researchers can often produce more detailed and complete investigations into their formulated problems, and discover areas of the problem that require more attention (Hyman, 1972).

Secondary data analysis is not without limitations, and several apply to this study. First, errors made in the original data collection are difficult to assess and detect as limited procedure information makes differentiating between self-report and data entry errors not possible. Second, the absence of complete personal data limits controlling for factors such as, parent education and socio-economic status. Third, advancements in theory and research in the field have occurred between data collection and the analysis that cannot be incorporated into this study. Specifically, Ross, Shannon, Salisbury-Glennon, and Guarino (2002), recommend slight wording changes for the PALS when used with a college sample; these were not included in the instrument used for this study. Similarily, this study cannot accommodate the recent suggestion of differentiating between mastery avoid and mastery approach goal orientations.

Summary of Chapter Three

This chapter outlined the research methodology and data analysis for the current study, including the procedure, sample, instrumentation, and secondary data analysis. The rationale and limitations of the study were also discussed.

Chapter Four: Results

Sample Characteristics

One hundred ninety-six first year undergraduates participated in this study, 41% male, and 59% female. Participants were predominantly Caucasian (78.1%), with the remaining self-identifying as Hispanic (5.6%), Asian (4.1%), African-American (1%), Native American (1%), and other (2.6%). When the study began, (September, 2000) participants ranged in age from 17 to 20 (M=18.5, SD=.60).

Preliminary Analyses

Internal Reliability

The internal reliability was calculated for the PALS, BDI, STAI, & SDQ-III academic competence subscale data using Chronbach's alpha (see Table 3). All scales exhibited good internal reliability with the exception of the PALS Performance Approach subscale ($\alpha = .67$). PALS item 10 was poorly worded for our university age participants ("I'd like to show my teacher that I'm smarter than the other kids in this class"). When item 10 was removed the Performance Approach subscale reliability increases to an acceptable level ($\alpha = .79$). Based on these findings, I excluded item 10 of the PALS Performance Approach subscale from all further analyses. The exclusion of this item is justified at a construct level for two reasons. First, the use of "this class" was not clear, as participants did not complete this questionnaire during a scheduled class. Several other items in the instrument refer more generally to "my class" or "class" and may avoid this confusion. Second, as the mean age of participants was 18.5 the use of "kids" may have been off-putting. This is the only item in the instrument to use this word.

Table 3.

Inter-item reliability for BDI, STAI, SDQ-III, and PALS

Questionnaire	Chronbach's Alpha
BDI	.85
STAI	
State Anxiety	.87
Trait Anxiety	.87
SDQ Academic Competence	.85
PALS	
Mastery	.75
Performance Approach	
Item 10 included	.65
Item 10 excluded	.79
Performance Avoid	.86

Variable Means and Intercorrelations

Mean scores, standard deviations, and minimum and maximum obtained scores for the total sample are presented in Table 4 for both the predictor and outcome. Mean scores for the PALS subscales did not differ significantly from previous research with university age samples (Midgley et al, 1998). Representative norms are not available for the BDI (Ritcher, Werner, Herlein, Kraus, & Sauer, 1998), however mean scores did not differ significantly from other mean scores found from university classroom samples (O'Hara, Sprinkle, & Ricci, 1998). Mean scores on the STAI were significantly higher than mean

scores of other American university students on the trait ($t = 9.21$, $p < .0001$) and state ($t = 11.28$, $p < .0001$) anxiety subscales. (Baloglu, Abbasi,& Masten, 2007). Representative norms are not available for the SDQ III.

Table 4.

Mean Scores for Predictor Variables and Motivation Orientation Subscales (N=196)

	M	SD	Min	Max
Predictor Variables				
Academic Competence (SDQ III)	4.48	.64	3.10	6.40
Depressive Symptoms (BDI)	8.67	7.36	.00	38.38
State Anxiety (STAI)	47.45	4.46	35.00	63.00
Trait Anxiety (STAI)	46.81	3.88	37.00	58.00
Motivational Orientation (PALS)				
Mastery	19.76	3.12	10.00	25.00
Performance Approach	20.65	5.96	6.00	61.00
Performance Avoid	14.19	5.27	6.00	30.00

Correlation Analysis

Table 5 shows the Pearson product-moment intercorrelations among all the measures. Supporting the discriminant and convergent validity of the PALS, its Mastery and Performance Avoid subscales were negatively correlated ($r = -.25$, $p < .01$), and its Performance Approach subscale was positively correlated with its Performance Avoid subscale ($r = .50$, $p < .01$).

The UHF open-ended survey also demonstrated some convergent and discriminant validity among its subscales. Demonstrating convergence, mastery hopes were

significantly correlated with mastery fears ($r = .18$, $p < .05$), and performance hopes were significantly correlated with performance fears ($r = .22$, $p < .01$). Demonstrating discriminant validity, performance and mastery hopes were significantly negatively correlated($r = -.38$, $p < .01$) and performance and mastery fears were significantly negatively correlated ($r = -.32$, $p < .01$).

There was partial support for the convergence of the UHF mastery and performance scales with the PALS Mastery and performance subscales. The PALS Performance Avoid subscale was significantly and positively correlated with UHF performance hopes ($r = .23$, $p < .01$); however, there were no other significant correlations between the PALS subscales and the open-ended responses of the UHF.

The PALS Mastery subscale was significantly correlated at the $p < .01$ level with all predictor variables (depressive symptoms $r = -.37$; state anxiety $r = .19$; perceived competence $r = .26$) except trait anxiety. Conversely, the PALS Performance Approach subscale was only significantly correlated with trait anxiety ($r = .16$, $p < .05$). The PALS Performance Avoid subscale, however, was significantly and positively correlated with depressive symptoms ($r = .32$, $p < .01$) and trait anxiety ($r = .19$, $p < .05$). There were no significant correlations between the open-ended responses of the UHF and any of the predictor variables.

There was a significant positive correlation between depressive symptoms and trait anxiety ($r = .31$, $p < .01$), and a significant negative correlation between depressive symptoms and state anxiety ($r = -.15$, $p < .05$). State anxiety was positively correlated to trait anxiety ($r = .22$, $p < .01$) and perceived competence ($r = .26$, $p < .01$). There were no other significant correlations between predictor variables.

Table 5.

Correlations Between Measures (N = 179)

	PALS			UHF Hopes		UHF Fears		Predictor Variables			
	1	2	3	4	5	6	7	8	9	10	11
PALS											
1. Mastery	1										
2. Performance Approach	-.28**	1									
3. Performance Avoid	-.25**	.52**	1								
UHF Hopes											
4. Mastery	.05	-.02	.067	1							
5. Performance	-.14	.13	.23**	-.39**	1						
UHF Fears											
6. Mastery	-.03	.09	.07	.18*	-.19*	1					
7. Performance	-.11	.05	.13	.05	.22**	-.32**	1				
Predictor Variables											
8. Depressive Symptoms	-.37**	.12	.32**	.02	.06	-.02	.06	1			
9. State Anxiety	.19**	.02	-.12	-.02	-.08	.13	-.06	-.15*	1		
10. Trait Anxiety	-.13	.16*	.19*	-.11	-.12	.05	-.01	.31**	.22**	1	
11. Perceived Competence	.26**	.01	-.08	-.10	.07	.01	.01	-.16	.26**	.08	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Cohort Differences

An independent samples t-test revealed that scores on the SDQ-III academic competence subscale were higher for the fall cohort ($M = 4.97$, $SE = .10$) than the spring cohort ($M = 4.25$, $SE = .03$, $t = -6.80$, $p < .05$). There were no other statistically significant differences between the fall cohort and the spring cohort on the predictor (depressive symptoms, anxiety, and perceived academic competence) and outcome (Mastery, Performance Approach, and Performance Avoid orientation) variable scores.

Gender Differences

Independent samples t-tests revealed that scores on the BDI were higher for females ($M = 9.65$, $SE = 7.53$) than for males ($M = 7.23$, $SE = 6.91$; $t = -2.29$, $p < .05$) and that STAI state anxiety subscale scores were higher for men ($M = 48.25$, $SE = 3.84$) than for women ($M = 46.88$, $SE = 4.79$, $t = -2.04$, $p < .05$). There were no other statistically significant gender differences between predictor and outcome variable scores.

Hopes and Fears Open Ended Responses

Open ended responses on the university hopes and fears items were coded into six categories: academic mastery, academic performance, social, athletic, appearance and other. Statements categorized as "Other" were clearly unrelated to the other six categories (e.g. *getting sick*) or did not provide enough information to identify a category (e.g. *to be successful*). Prototypical examples of free responses within each category are outlined in Table 6. The intercoder reliability among the 4 coders was acceptable (Cohen's kappa = .88, SE = .029).

Table 6.

Examples of Open-ended Responses for Each Category of Hopes and Fears

	Hopes	Fears
Academic Mastery	*I hope to learn a lot, and become a well-rounded person.*	*Taking the right courses to learn new and interesting things, staying active in class and on campus.*
Academic Performance	*I would like to have a GPA between 3.7 and 4.0.*	*I'm worried that I will not be able to keep up academically with my peers and have a good GPA to get into a good graduate school after I finish here, if I finish here.*
Social	*I hope to develop relationships and friendships and a support system that I will have for the rest of my life.*	*That the people who I consider friends turn their back on me/ a very serious boyfriend dumps me....basically the fear of abandonment.*
Athletic	*I hope to be the best athlete I can possibly be in all intramural sports, and to work out and be in great shape for school.*	*Although I am a recruited athlete, I fear being cut from the team.*
Appearance	*To lose weight and be in shape*	*Getting fat*
Other	*I hope to go abroad next year.*	*Losing my interest in music.*

Within-subject frequency counts of the number of categories showed that most participants expressed a diverse variety of hopes and fears. For example, of the 183 participants who expressed three fears, only 5 expressed fears all of the same category (1 academic performance, 2 social, and 2 other). Table 7 presents frequency counts, standardized means and standard errors for each category. The mean refers to the average number of times an individual expressed that hope or fear, out of the possible 3 hopes and 3 fears they listed. Social hopes were the most frequently expressed hope (M = .96, SE = .05), followed by academic performance hopes (M = .68, SE = .05). For fears, academic performance (M = .90, SE = .06) and then social (M = .84, SE = .06) were most often reported. The least often expressed were appearance based hopes or fears (M = .09, SE = .02 and M = .03, SE = .01 respectively).

Table 7.

Frequency count, Mean, and Standard Error for Open-ended Response Categories of Hopes and Fears

	Frequency Counts										Standardized Means & Standard Errors			
	Hopes					Fears					Hopes		Fears	
Category	0	1	2	3	Total	0	1	2	3	Total	M	SE	M	SE
Academic Mastery	118	69	9	0	87	108	79	8	1	97	.44	.04	.50	.04
Academic Performance	85	91	18	2	133	66	90	32	8	178	.68	.05	.90	.06
Social	44	117	34	1	188	81	70	41	4	164	.96	.05	.84	.06
Athletic	174	22	0	0	22	187	8	1	0	10	.11	.02	.05	.02
Appearance	178	18	0	0	18	191	5	0	0	5	.09	.02	.03	.01
Other	93	79	22	2	129	113	60	21	2	108	.66	.05	.55	.05
Missing	180	1	1	13	42	185	0	0	11	33	.22	.06	.17	.05

Regression Analysis

Regression of Goal Orientation Themes from the University Hopes and Fears onto Depressive Symptoms, Anxiety, and Perceived Competence

The presence of goal orientation themes in students' open-ended listing of university hopes and fears were regressed onto their depressive symptoms, anxiety, and perceived competence scores. This analysis required four separate regression models: one for each motivational orientation (Mastery and performance), first from the university hopes question and then from the university fears question. Regressions were performed using standardized scores and listwise deletion. The BDI, STAI, or SDQ II academic scores and their interactions were not significant predictors of frequency of performance or Mastery themes in either the hopes or fears questions (See Appendix E for detailed information on these regression analyses). Performance and Mastery themes in students' free-response listing of their university hopes and fears were unrelated to students' anxiety, depressive symptoms, or perceived academic competence scores.

Regression of PALS Goal Orientation Scores onto Depressive Symptoms, Anxiety, and Perceived Competence Scores

I performed 3 regression analyses, one for each of the PALS subscales (Mastery, performance-approach, and Performance Avoid), simultaneously entering the standardized independent variables (depressive symptoms, state anxiety, trait anxiety and perceived competence) and their two-way interactions. Three and four way interactions were not tested. Only the interaction of depressive symptoms with perceived competence as predictors of Performance-Approach and Performance-Avoid achievement motivation were significant, so the other interaction terms were dropped from the regression models.

Table 8 displays the unstandardized and standardized regression coefficients, significance tests and adjusted R^2 for each of the three regression models (Mastery, Performance Approach, and Performance Avoid).

Table 8.

Regression Coefficients for Three Motivational Orientation Models; Mastery, Performance Approach, and Performance Avoid

Predictor	B(*SE*)	*β*	F	Adjusted R^2
Mastery *(N=179)*				.19***
Intercept	19.71 (.22)			
Trait anxiety (STAI-T)?	-.23 (.24)	-.07	.96	
State anxiety (STAI-S)	.36 (.23)	.12	2.45	
Depressive Symptoms (BDI)	-.92 (23)	-.30	15.81**	
Academic Competence (SDQ III)	.57 (.23)	.19	6.31*	
Depressive Symptoms x Competence	.03 (.27)	.01	.02	
Performance Approach *(N=179)*				.05
Intercept	17.50 (.31)			
Trait anxiety (STAI-T)	.54 (.34)	.14	2.51	
State anxiety (STAI-S)	.01 (.33)	.002	.001	
Depressive Symptoms (BDI)	.20 (.33)	.05	.36	
Academic Competence (SDQ III)	-.07 (.33)	-.02	-.05	
Depressive Symptoms x	-.86 (.38)	-.17	5.02*	

Competence			
Performance Avoid *(N=179)*			.16***
Intercept	13.88 (.37)		
Trait anxiety(STAI-T)	.75 (.40)	.15	3.57
State anxiety (STAI-S)	-.54 (.39)	-.10	.03
Depressive Symptoms (BDI)	1.18 (.39)	.23	9.08**
Academic Competence (SDQ III)	-.34 (.38)	-.07	.80
Depressive Symptoms x Competence	-1.16 (.45)	-.19	6.69*

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

Mastery orientation. The combined predictor variables accounted for a significant portion of the variance in the PALS Mastery orientation subscale, with an adjusted R^2 of .19 ($p < .001$). The BDI was a significant and negative predictor of Mastery orientation ($\beta = -.30$, $p < .01$), such that higher depressive affect was associated with lower PALS Mastery scores. Perceived academic competence, as measured by the SDQ III, was also significantly and positively associated with Mastery orientation ($\beta = .19$, $p < .05$). In other words, students with higher perceived academic competence and low depressive symptoms scores were more likely to express Mastery beliefs. The interaction of depressive symptoms and competence was not a significant predictor of Mastery orientation.

Performance approach orientation. The full Performance Approach orientation model did not account for a significant proportion of its variance ($R^2 = .05$, $p = .096$) despite a significant interaction of depressive symptoms with perceived academic competence ($\beta = -.16$, $p < .05$). See Figure 1 for a graph of this interaction. This interaction suggests that

for students with low perceived academic competence, as depressive affect increases so too does their performance-approach motivation for achievement. In contrast, for students with higher perceived academic competence, a performance-approach achievement motivation is associated with less depressive affect, but becomes less likely at higher levels of depressive symptoms.

Performance avoid orientation. The combined predictor variables accounted for significant variance in Performance Avoid scores ($R^2 = .16$, $p < .001$). Depressive symptoms interacted significantly with perceived academic competence ($\beta = -.18$, $p < .05$). The graphed interaction (see Figure 2) suggests that when competence is low depressive symptoms and Performance Avoid orientation are positively related (i.e. greater depressive symptoms predict greater performance orientation). When perceived academic competence is high, however, depressive symptoms and Performance-Avoid scores are uncorrelated.

Figure 1.

Depressive Symptoms by Perceived Academic Competence Interaction for Performance Approach Orientation

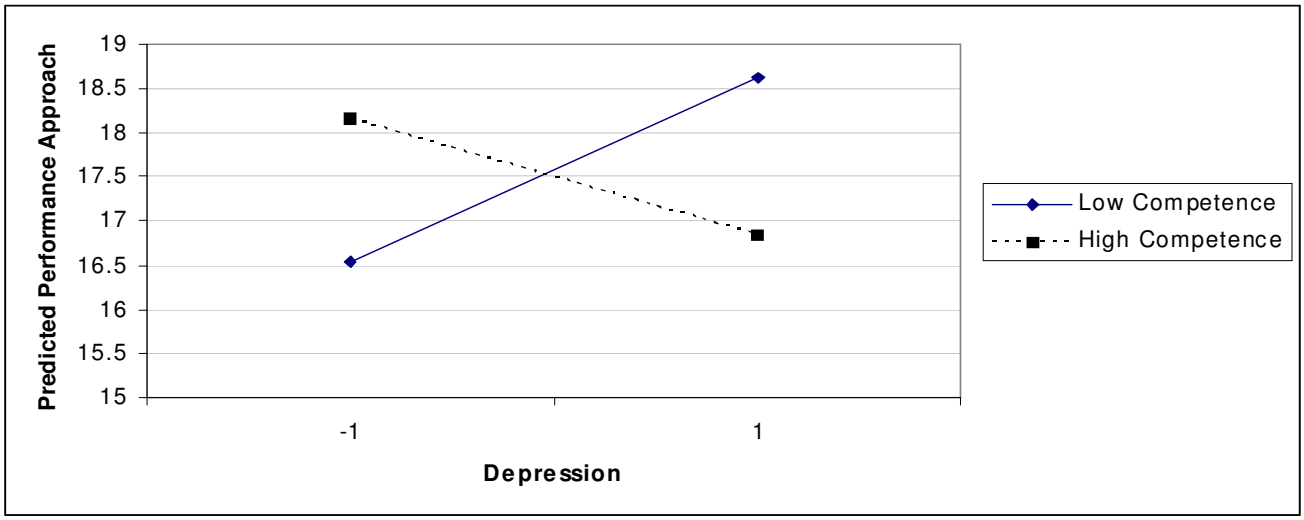
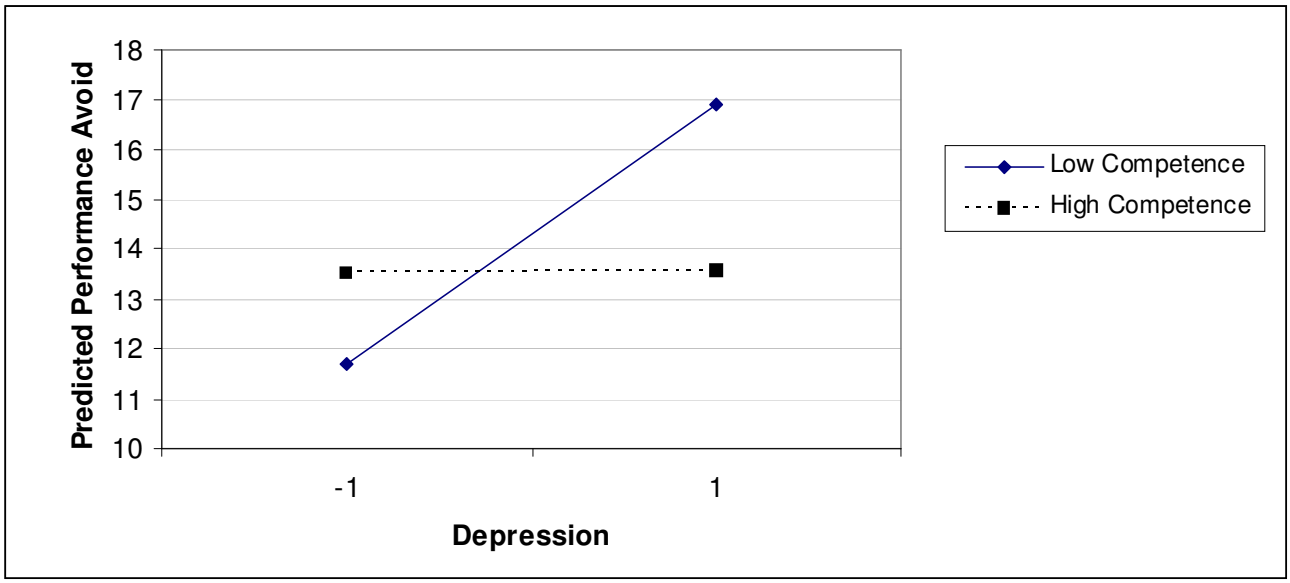


Figure 2.

Depressive Symptoms by Perceived Academic Competence Interaction for Performance Avoid Orientation



Gender Differences

To test for gender differences in the relation of goal orientation to trait and state anxiety, depressive symptoms and academic competence, the regression analyses were repeated by splitting the data into males (N=74) and females (N=105). Table 9 provides a summary of the three regression models.

Mastery orientation. The model significantly predicted Mastery Orientation scores for females ($R^2 = .16$, $p < .01$) and males ($R^2 = .23$, $p < .01$). For females, depressive symptoms was the only significant predictor ($\beta = -.29$, $p < .01$), with increases in depressive symptoms predicting decreases in Mastery motivation, as hypothesized. For males, both depressive symptoms ($\beta = -.28$, $p < .05$) and competence ($\beta = .31$, $p < .05$) contributed significantly to the prediction of Mastery orientation in the hypothesized

directions. Greater depressive symptoms predicted lower Mastery Orientation scores, and higher academic competence predicted a stronger Mastery orientation.

Performance approach orientation. Although the model did not predict a significant proportion of the Performance Approach orientation score variance for either gender, the adjusted R^2 approached significance for females ($R^2 = .10$, $p = .06$). This discrepancy was mainly due to the stronger trait anxiety coefficient for females ($\beta = .26$, $p = .02$). For females, greater reported trait anxiety predicted greater Performance Approach scores.

Performance avoid orientation. The largest discrepancy in male and female goal orientation models was for Performance Avoid orientation; the adjusted R^2 was significant for females ($R^2 = .27$, $p < .01$) but not for males ($R^2 = .07$, $p = .40$). For females, the model was characterized by a significant depressive symptoms by competence interaction ($\beta = .24$, $p < .01$), and significant trait ($\beta = .32$, $p < .01$) and state anxiety ($\beta = -.19$, $p < .05$) main effects. Although difficult to interpret in light of the interaction, the depressive symptoms main effect was also significant ($\beta = .20$, $p < .05$). Graphing this interaction suggests that depressive symptoms are a positive predictor of Performance Avoid orientation when females have low academic competence (Figure 3), and not predictive when females have high academic competence. The direction of these predictions were as hypothesized with the exception of state anxiety, which was a negative predictor of Performance Avoid.

Table 9.

Regression Coefficients for Females (N = 105) and Males (N = 74) for Three Motivational Orientation Models; Mastery, Performance Approach, and Performance Avoid

Predictor	B(*SE*)	*B*	F	R^2
Mastery				
Females				.16**
Intercept	19.51 (.30)			
Trait anxiety	-.24 (.33)	-.07	.51	
State anxiety	.44 (.29)	.15	2.30	
Depressive Symptoms	-.89(.31)	.-29	8.24**	
Competence	.45 (.30)	.14	2.19	
Depressive Symptoms x Competence	-.02 (.37)	-.01	.00	
Males				.23**
Intercept	20.07 (.34)			
Trait anxiety	-.22 (.33)	-.08	.43	
State anxiety	.03 (.41)	.01	.01	
Depressive Symptoms	-.85 (.38)	-.28	5.07*	
Competence	.90 (.39)	.31	5.27*	
Depressive Symptoms x Competence	.32 (.44)	.09	.53	
Performance Approach				

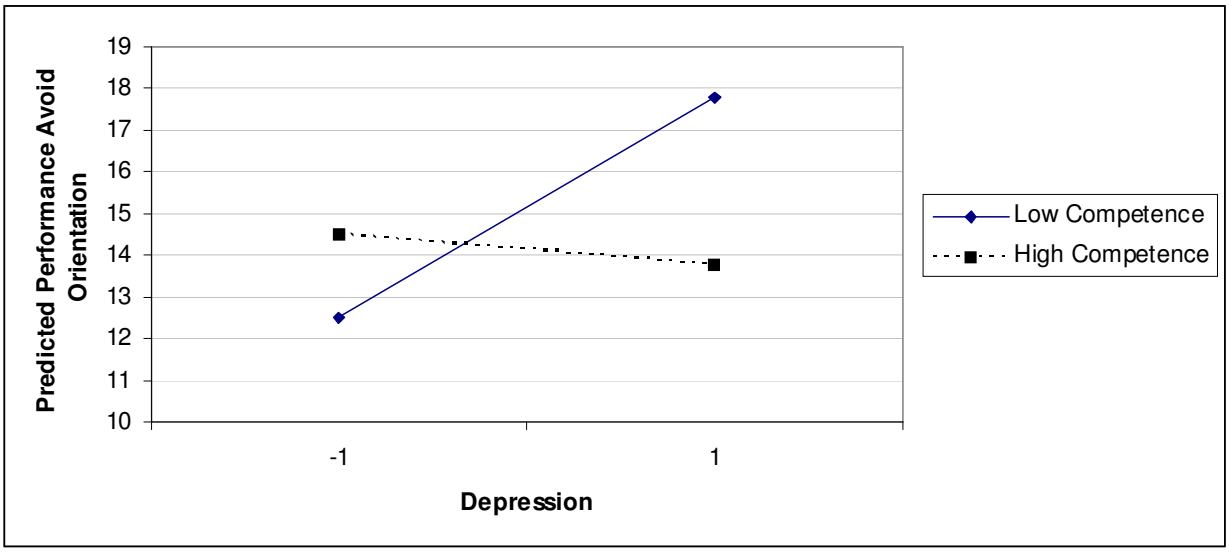
Females				.10
Intercept	17.27 (.41)			
Trait anxiety	1.11 (.46)	.26	5.89*	
State anxiety	-.26 (.40)	-.07	.42	
Depressive Symptoms	.12 (.42)	.03	.09	
Competence	-.29 (.41)	-.07	.49	
Depressive Symptoms x Competence	-.91 (.50)	-.18	3.33	
Males				.04
Intercept	17.81 (.52)			
Trait anxiety	-.17 (.51)	-.04	.11	
State anxiety	.35 (.63)	.07	.30	
Depressive Symptoms	.47 (.58)	.11	.65	
Competence	.21 (.60)	.05	.11	
Depressive Symptoms x Competence	-.54 (.68)	-.11	.64	
Performance Avoid				
Female				.27**
Intercept	14.59 (.45)			
Trait anxiety	1.63 (.49)	.32	10.87**	
State anxiety	-.87 (.43)	-.19	4.09*	
Depressive Symptoms	.97 (.46)	.20	4.56*	
Competence	-.50 (.44)	-.10	1.26	

Depressive Symptoms x Competence	-1.49 (.54)	.24	7.62**
Males			.07
Intercept	12.70 (.64)		
Trait anxiety	-.26 (.63)	-.05	.16
State anxiety	.35 (.77)	.06	.20
Depressive Symptoms	1.17 (.72)	.22	2.68
Competence	-.16 (.74)	-.03	.05
Depressive Symptoms x Competence	-.89 (.83)	-.15	1.15

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

Figure 3.

Depressive Symptoms by Perceived Academic Competence Interaction for Performance Avoid Orientation for Females



Cohort Differences

To test for cohort differences, the regression analyses were repeated, this time splitting the data into fall (N = 58) and spring semester (N = 121). A summary of the regressions is presented in Table 10.

Mastery orientation. The Mastery orientation model was significant for both cohorts, however, the fall semester model accounted for more of the total variance ($R^2 = .45$, $p < .001$) than the spring semester ($R^2 = .15$, $p = .002$). The high contribution of perceived academic competence for the fall semester ($\beta = .55$, $p < .001$) but not the spring semester cohort, accounts for most of the difference in the cohorts' regression models. Depressive symptoms was a significant predictor in the hypothesized direction for both the fall ($\beta = -.28$, $p < .05$) and the spring ($\beta = -.32$, $p < .01$), cohorts.

Performance approach orientation. The model significantly predicted Performance Approach orientation for the spring semester ($R^2 = .10$, $p < .05$) but not the fall ($R^2 = .06$, $p = .67$). For the spring semester, the depressive symptoms by competence interaction ($\beta = -.27$, $p < .05$) was a significant predictor of Performance Approach orientation. Graphing this interaction indicates high depressive symptoms was predictive of higher Performance Approach orientation if perceived academic competence was low; however if perceived academic competence was high, depressive symptoms had little effect on Performance Approach orientation (Figure 4).

Performance avoid orientation. The model significantly predicted Performance Avoid orientation for the spring semester ($R^2 = .25$, $p < .001$) but not the fall ($R^2 = .09$, $p = .43$). For the spring cohort, the depressive symptoms by competence interaction was a significant predictor of Performance Avoid orientation. Graphing the interaction suggests

depressive symptoms has a greater positive influence in the prediction of Performance Avoid orientation when competence in low compared to when competence is high (Figure 5). Although difficult to interpret in light of the interaction, the depressive symptoms ($\beta = .25$, $p < .05$), and state anxiety main effects ($\beta = -.21$, $p < .05$) were significant predictors for the spring semester. The direction of prediction for state anxiety was not as hypothesized.

Table 10.

Regression Coefficients for Fall Cohort (N = 58) and Spring Cohort (N = 121) for Three Motivational Orientation Models; Mastery, Performance Approach, and Performance Avoid

Predictor	B(*SE*)	*B*	F	R^2
Mastery				
Fall Semester (N =58)				.43***
Intercept	18.93 (.43)			
Trait anxiety	-.09 (.38)	-.03	.06	
State anxiety	-.08 (.42)	-.02	.03	
Depressive Symptoms	-1.04 (.49)	-.28	4.52*	
Competence	1.39 (.30)	.55	21.48**	
Depressive Symptoms x Competence	.45 (.37)	.14	1.47	
Spring Semester (N = 121)				.15**
Intercept	19.68 (.33)			
Trait anxiety	-.27 (.30)	-.09	.82	
State anxiety	.51 (.27)	.17	3.61	
Depressive Symptoms	-.92 (.30)	-.32	9.59**	
Competence	-.16 (.48)	-.03	.12	
Depressive Symptoms x Competence	-.33 (.46)	-.07	.50	
Performance Approach				
Fall Semester				.06
Intercept	17.30 (.80)			

Trait anxiety	.61 (.71)	.13	.75	
State anxiety	.42 (.78)	.08	.30	
Depressive Symptoms	.31 (.90)	.06	.12	
Competence	-.35 (.56)	-.10	.40	
Depressive Symptoms x Competence	.94 (.69)	-.21	1.84	
Spring Semester				.10*
Intercept	18.19 (.43)			
Trait anxiety	.30 (.39)	.08	.61	
State anxiety	-.19 (.36)	-.05	.29	
Depressive Symptoms	-.09 (.39)	-.03	.06	
Competence	1.22 (.63)	.19	3.70	
Depressive Symptoms x Competence	-1.59 (.61)	-.27	6.77*	
Performance Avoid				
Fall Semester				.09
Intercept	14.74 (.97)			
Trait anxiety	.68 (.85)	.12	.63	
State anxiety	.69 (.94)	.11	.54	
Depressive Symptoms	.55 (1.09)	.09	.26	
Competence	-1.07 (.67)	-.24	2.57	
Depressive Symptoms x Competence	-.73 (.83)	-.13	.77	
Spring Semester				.25***
Intercept	13.80 (.50)			
Trait anxiety	.74 (.45)	.15	2.74	

State anxiety	-1.03 (.41)	-.21	6.27*
Depressive Symptoms	1.14 (.45)	.25	6.45*
Competence	.05 (.73)	.01	.01
Depressive Symptoms x Competence	-1.50 (.70)	-.20	4.57*

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

Figure 4.

Depressive Symptoms by Perceived Academic Competence Interaction for Performance Approach Orientation for Spring Cohort

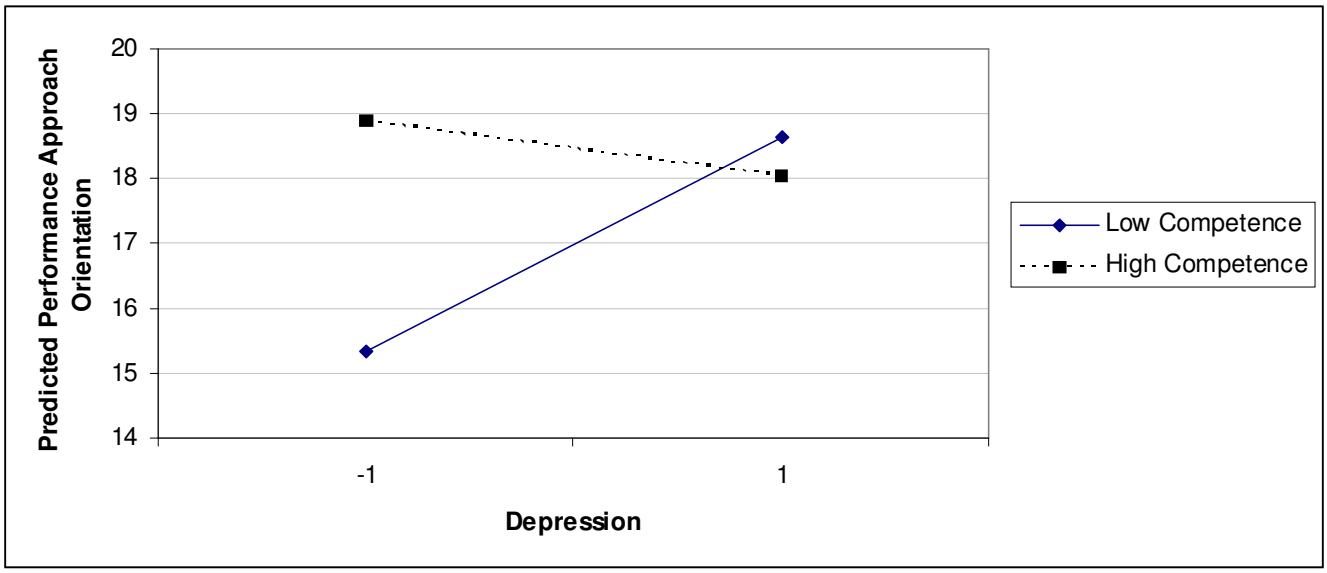
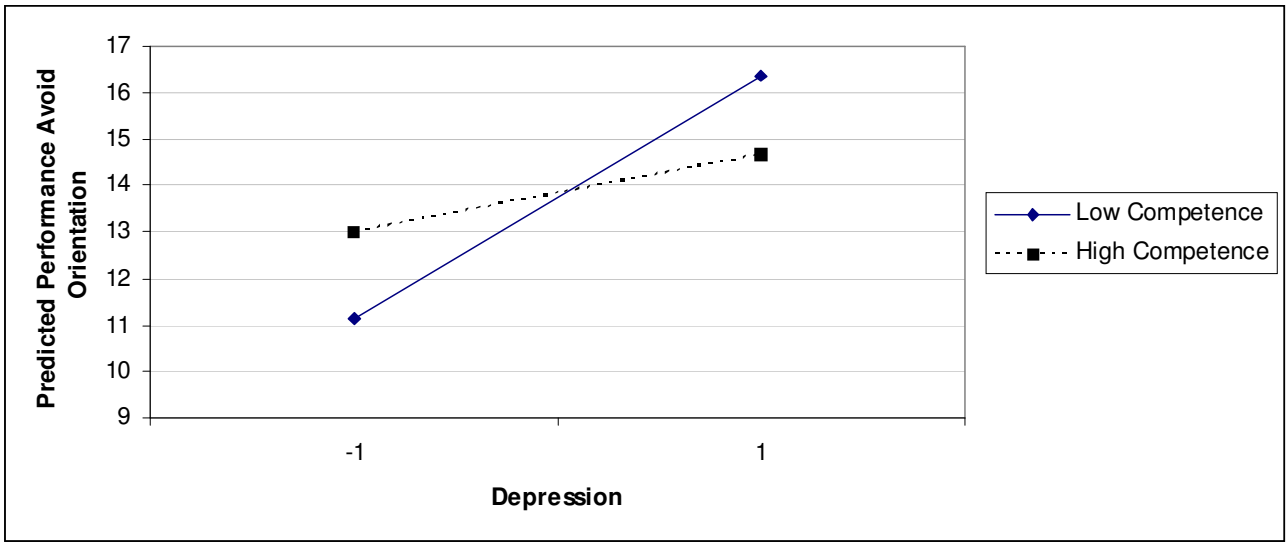


Figure 5.
Depressive Symptoms by Perceived Academic Competence Interaction for Performance Avoid Orientation for Spring Cohort



Chapter 5: Discussion

Overview

Five main findings emerged from this study: (a) affect and perceived competence predict goal orientations; (b) free-response data provides support for the performance avoid construct; (c) trait anxiety is a better predictor of goal orientations than state anxiety; (d) males and females have different affect and goal patterns; and (e) first semester and second semester participants had different affect and goal patterns.

Main Research Question

This study set out to answer the question do depressive symptoms, anxiety, and perceived competence, predict the variation in university students' goal orientations? We found that these predictor variables accounted for a significant amount of the variance of mastery orientation and performance avoid orientation.

As hypothesized, depressive symptoms positively predicted performance avoid, negatively predicted mastery, and had no effect on performance approach orientation. This is a finding with substantial implications. Several studies aimed to increase mastery goals over performance avoid goals have focused on classroom goal environment (Ames, 1992; Deemer, 2004; Summers & Svinicki, 2007). Results from the present study suggest (as Seifert, 1995 does) that research and interventions aimed at adaptive goal patterns should involve consideration of students' affect, not just classroom goal restructuring. It may also be beneficial to look for underlying cognitions or beliefs associated with affect, which, in turn, may influence goal pursuits.

The relation between anxiety and performance avoid orientation, although in the hypothesised direction, was not significant ($\beta = .145$, $p = .06$). Several factors may have

influenced this result. First, this study found anxiety influenced goal orientations for females, but not for males (see discussion on gender differences), so the negative relation between trait anxiety and performance avoid found in the male may have sample neutralized the regression from overall significance. Second, state anxiety in actual classes, or while studying may be significantly different than state anxiety measured in this testing situation.

As hypothesised, perceived academic competence was a positive predictor of mastery orientation, supporting a large body of research suggesting a positive perception of competency effects motivation and potential academic achievement (Bandura, 1994; Harter, 1981).

Despite the significant relation found between perceived academic competence and mastery orientation, the hypothesized negative relation between perceived academic competence and performance avoid orientation was not found. However, the interaction between depressive symptoms and perceived academic competence was significant, indicating that competence moderates the relation between depressive symptoms and performance avoid orientation; depressive symptoms have little effect when perceived academic competence is high, but when competence is low, depressive symptoms are a positive predictor of performance avoid orientation. Again, as actual competence levels of our sample were presumably high, this finding reiterates the importance of maintaining or enhancing perceived competence for adaptive goal patterns.

Secondary Research Questions

Do self-generated statements of school year goals demonstrate consilience for the constructs outlined by the PALS?

Considerable support was found for the PALS Performance Avoid orientation. The correlation analysis and resulting multimethod-multitrait table (Campbell & Fiske, 1959) provide construct validity for the PALS performance avoid orientation, as there was a significant positive correlation between performance avoid and the free response performance hopes. Similar results did not exist, however for performance approach orientation or mastery orientation. This could be because avoidance orientations were more salient in an open-ended format than approach orientations. Future research may include a measurement of mastery avoid orientation to test if students concerned with avoiding imperfection would generate more free response hopes and fears of this category than those approaching it. The significant positive correlations between mastery hopes and fears, and between performance hopes and fears provide evidence of convergent validity of the free response variables. Although the main goal of this study was not to develop this measure, these findings support the validity of a performance avoid orientation, and highlight the need for increased multitrait multimethod investigations of goal orientations to support performance approach and mastery orientation.

In sum, the free response data provided some support for the subscales of the PALS, particularly, for the performance avoid orientation. However conscilience for the performance approach and mastery subscales were not found. As none of the regressions with the free response data were significant, it is likely that the free response data contained too much variability that was unrelated to goal orientations. Future research should strive to provide ongoing divergent validity for the PALS subscales.

Do state and trait anxiety predict goal orientations differently?

In the three main regressions, trait anxiety accounted for more variance in goal orientations than state anxiety, although none at a significant level. However, this finding should be interpreted with caution, as state anxiety in actual classes, or while studying may be significantly different than state anxiety measured in this testing situation. For example, a recent study found computer anxiety to be unrelated to state anxiety in a pen and paper format, but related in a computerized version (Beckers, Witcherts, & Schmidt, 2007). In this study, the measure for state anxiety asked participants to respond to their feelings "now". However, the PALS, used language such as "in class" and "do my school work." Testing procedures used in the current study informed participants their identity would not be revealed, and provided a private place for them to complete the questionnaires, potentially reducing state anxiety. If relating PALS to an anxiety measure, perhaps the measure should be specific to learning situations, or administered in an authentic learning environment.

Contrary to the hypothesis, state anxiety was a significant negative predictor of performance avoid orientation in the spring semester and for females. Perhaps female participants who generally do not want to look dumb in comparison to others were relieved by questions of anxiety to which they could relate. Similarly, by the spring semester students could better identify with questions of anxiety, and combined with a situation where they were not being graded or asked to perform, this may have supported a reduction in state anxiety.

Do female students demonstrate different affect and goal patterns than male students?

There were several differences in affect and goal patterns between female and male participants. When predicting mastery orientation, the model accounted for more

variance among males than females, due mainly to the contribution of perceived academic competence as a positive predictor for males but not females. However, when predicting performance avoid orientation, the model accounted for more variance with females than males, with all predictors except perceived academic competence being significant for females, and none for males. There was a remarkable difference in trait anxiety in predicting performance avoid orientation between the sexes. In fact, anxiety had a greater impact on predicting females' goal orientations over males' in all three regressions. This finding compliments research by Crocker, Karpinski, Quinn, and Chase (2003) that investigated the impact of grades on contingent self-worth among male and female engineering and psychology majors. They found that women in the male-dominated field of engineering had the biggest drop in self-esteem on days when they received bad grades but no increase in self-esteem on good grade days, compared to male engineering majors, and males and female psychology majors. They suggest that if self-worth is highly contingent on academics, women in engineering may be particularly focused on avoiding failure. Our findings support this hypothesis, as Carver, Sutton, & Scheier (2002) found success at avoidance goals is associated mainly with relief explaining the high association of trait anxiety and performance avoid orientation among females found in this study. Further research is needed to determine why this effect occurs. Furthermore, the lack of influence that perceived competence had on females' goal orientations is deserving of further investigation.

Interestingly, despite the difference in predicting goal orientations, there were no differences between genders on adopting goal orientations. This finding is contrary to previous research, which has found females more likely to adopt mastery goals and males

more likely to develop performance goals (e.g. Church et al., 2001; Harackiewicz et al., 1997). However, the finding supports work by Long, Monoi, Harper, Knoblauch, and Murphy (2007) who suggest that previous differences in goal orientations between the sexes were due to developmental factors, and these even out by adolescence. Another explanation, as research by Dowson, McInerney, and Nelson (2006) suggests, is the parity in goal orientations may be indicative of a competitive school environment. For example, Braten and Stromso (2006) found with a student teacher sample, females were more likely to adopt mastery goals and males were more likely to adopt performance goals. However, with a very competitive (perhaps masculine) business administration sample, the gender differences became null.

The University of Notre Dame may reflect a similar masculine environment. Historically, Notre Dame has lagged behind in co-educational standards; it was not until 1972 that the University of Notre Dame opened it's doors to female students -- over one hundred years after neighbouring Indiana University converted to co-education (Wikipedia, 2007). Currently, 77% of full time faculty are male (State University, 2007), and despite a national ratio of 53/47 in favour of women enrolled in colleges, Notre Dame's ratio of 53/47 is still in favour of men (State University, 2007). In this historically masculine environment, perhaps women chose to adopt the more masculine, but less adaptive performance orientations, the consequences of which deserve further research.

In sum, patterns of affect and goal orientations differ for females and for males. Anxiety predicts goal orientations for females but not males, and competence predicts mastery orientation for males, but not females. Future research should consider the sex of

participants and environment when investigating goal orientations, their causes, and consequences.

Do students in their first semester of university demonstrate different affect and goal patterns than students in their second semester?

There were different affect and goal patterns between students in the fall semester and the spring semester. The model was not significant in predicting performance avoid orientation with the fall cohort, but was with the spring cohort. Trait anxiety, depressive symptoms, and the interaction of depressive symptoms and perceived academic competence all became significant predictors in the spring. Despite this considerable difference in predictors and contrary to previous research (Kowalski, 2007; Lieberman & Remedios 2007), which found that students become more grade-oriented and work avoidant and less learning-oriented over time, this study found virtually no differences in goal orientations between the cohorts.

These findings generate some interesting questions for future research. For example, what predicts performance avoid orientation for students in their first semester at university? What about the post-secondary experience brings the association between affect and performance avoid orientation by the spring semester? Do patterns of prediction change further as students' progress through subsequent years of post secondary education?

A recent study by Lieberman and Remedios (2007) found that students' motives for studying changed as they progressed through their degrees. Students became more concerned with grades and less likely to expect enjoyment from their classes. The authors speculate that the pressure to obtain good grades could be undermining students' interest

in learning. Or perhaps students hold unrealistic expectations upon entering university, and the shift simply shows an adaptation to more realistic expectations. Findings from the current study suggest that affect should be considered in future research.

For mastery orientation, perceived academic competence was the strongest predictor for the fall cohort. This supports a large body of literature suggesting that a positive perception of one's competency impacts their motivation and potential academic achievement (Bandura, 1994; Harter, 1981, for example). However, in the spring cohort there was a very clear switch from competence being the strongest predictor in the fall to depressive symptoms being the strongest (negative) predictor in the spring. Again, this finding is despite there being no difference in actual goal orientation adoption between the cohorts. However, participants in the spring semester did have significantly lower levels of perceived academic competence than participants in the fall semester. The drop in perceived academic competence and its contribution to the variance in mastery orientation raises several interesting questions. The University of Notre Dame boasts extremely competent freshman, with the average entering student expected to rank in the top 5.5% of their high school class (Heininger, 2004). Is there a discrepancy between actual competence and perceived competence? The reason for the drop in competence, and change in the pattern for predicting mastery orientation also require future research. How students define and respond to failure, and means for promoting adaptive responses to challenging environments deserve further investigation with a post secondary population. A study by Kowlaski (2007) suggests students' classroom and campus experiences are associated with changes in motivational orientation. The results of this study suggest that it might be beneficial to look at the role classroom and campus

experiences play in the formation of goal orientations by looking at the mediating role of perceived competence and depressive symptoms.

Additional Findings

An interesting finding was the high frequency of social hopes and fears reported in the free response data. There were 188 statements categorized as social hopes, putting it well above the second highest reported of performance hopes at 133. Statements categorized as social fears were also high, ranking second, behind performance fears. Responses in the social category included separation from one's family. This is important as recent research shows that family communication may mediate the relationship between depressive cognitions and academic motivation (Webb, Moore, Rhatigan, Stewart, & Getz, 2007). Social goal orientations have become a recent area of interest (Horst, Finney & Barron, 2007). Covington (2000) notes how little we understand about social goals and their role in education, adding that students often place more importance on pursuing social goals. This study's findings support this recent interest in investigating social goal orientations.

We found males to be significantly higher in state anxiety than females. This finding was both unexpected and contrary to previous research which has found the opposite gender pattern (Armstrong & Khawaja, 2002). Perhaps in our private self-report environment females were more comfortable than males responding and reflecting, thus reducing state anxiety.

Limitations and Future Research

Several limitations of the current study suggest opportunities for future research. First, data in the present research are correlational, and therefore do not allow

conclusions about causality. Despite the time sequence of the fall and spring cohort, and language of affect as predictors of goal orientations, causal conclusions about these relationships require further investigation,

The sample size did not allow for investigation of separate goal patterns for gender and cohort simultaneously. However, considering the interesting patterns found when the data was split for cohorts and sexes, splitting the data simultaneous could provide further insight into affect and goal patters.

The homogeneity of this sample (78% white) limits the generalization of the findings. Previous research has found ethnic differences in motivational goal orientations (Abu-Hilal & Darwish, 2005; Urdan, 2004). Different patterns for predictor variables may also be cultural. Recent research suggests that the positive relation between perceived competence and academic achievement exists at the individual level only. A multinational study of competence and achievement revealed when the unit of analysis is the country, the opposite relation exists (Shen, 2002). In other words, there is a negative relation between self perceptions and achievement. Shen hypothesizes that this pattern reflects the effect of cultural standards and expectations. Indeed, others have questioned the Western nature of this relationship and argue in a non-Western society, this relationship might not be true (Heine, Lehman, Markus & Kitayama,1999).

Other research has shown the relation of depressive symptoms and academic competence differs by ethnicity. Kistnet, David, and White (2003) found an ethnic by sex interaction effect on depressive symptoms. This relation was mediated by perceived and actual competence. With this in mind, the results of this study should be interpreted cautiously and findings need to be replicated with more diverse populations before broad

conclusions can be drawn.

This study used a trichotomous goal framework to investigate goal orientations. However, there is recent evidence of a mastery avoid orientation (Elliot & McGregor, 2001). As reliable measures of the 2 by 2 goal framework become available, future research on affect and goal orientations should consider this additional goal construct.

As this study included only two-way interactions, future research should test third and fourth level interactions of similar variables.

Several findings lead to the implication that the competitive environment of the university may influence goal orientation patterns. However, this study did not include a measure of how students felt about their school environment, and therefore suggestions are speculative. Future research could investigate this by including constructs of perceived competitive environment in goal orientation studies.

Recent research has uncovered several psychological costs associated with children of the affluent (Luthar & D'Avanzo, 1999; Luthar & Becker, 2002; Luthar & Latendresse, 2005; Luthar, 2003). The university reserves 21 to 24 percent of admissions spots for legacy (children of alumni) students (University of Notre Dame, 2007). Because of the high tuition costs, the majority of the Notre Dame undergraduate student body come from high income, professional families. However, this study had no measure of socio-economic status (SES) to test its influence in goal patterns. Luthar and D'Avanzo (1999) found that affluent youth reported significantly higher levels of anxiety and depression than a group at the other end of the SES spectrum, inner-city youth. In fact, one in five suburban girls in the 10^{th} grade reported clinically significant levels of depressive symptoms, a rate 3 times higher than normative samples. Additionally, the

affluent children reported higher levels of substance abuse. The current study found participants' anxiety levels to be higher than other American university students (Baloglu, Abbasi,& Masten, 2007). Luthar and Latendresse (2005) postulate that isolation from adults and achievement pressures contribute to these maladjustments. This emerging research demonstrates both the value of examining psychological constructs among this "privileged" population, and need to integrate SES into studies of anxiety and depression.

Conclusion

The findings from this study demonstrate the connection between affective constructs and achievement motivation theory. There is an ambitious road ahead for research in further understanding this relationship. However, understanding these affect and goal patterns has the potential to improve well being and adaptive goal patterns of students, a matter of great importance.

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Appendix A: Patterns of Adaptive Learning Survey Items

1	I like coursework that I'll learn from even if I make many mistakes.
2	I want to do better than other students in my classes.
3	An important reason for doing my coursework is so that I don't embarrass myself.
4	I'm certain I can master the skills taught to me in college this year.
5	An important reason for why I do my coursework is that I like to learn new things.
6	I would feel successful if I did better than most of the other students in one of my classes.
7	It is very important to me that I don't look stupid in class.
8	I can do even the hardest coursework here at college if I try.
9	I like classes the best when they really make me think.
10	I'd like to show my professors that I'm smarter than other students.
11	I do my coursework is so that professors don't think that I know less than others.
12	If I have enough time, I can do a good job in all my classes.
13	An important reason why I work hard at course work is because I want to get better at it.
14	Doing better than other students in my classes is important to me.
15	The reason I do my work is so that others won't think I'm dumb.
16	I can do almost all the work in my classes if I don't give up.
17	One of my main goals is to avoid looking like I can't do college level work.
18	I would feel really good if I was the only one in class who could answer a professor's question.
19	Even if the work is hard, I can learn it.
20	I do my coursework because I'm interested in it.
21	It's important to me that other students in my classes think that I am good at my work.
22	I'm certain that I can figure out how to do the most difficult class work.
23	No mater how hard I try, there is some coursework I'll never understand.
24	One reason I would not speak up in class is to avoid looking stupid.

Appendix B: Beck Depression Inventory Items

A. I do not feel sad
I feel sad.
I am sad all the time and I can't snap out of it.
I am so sad or unhappy that I can't stand it

B. I am not particularly discouraged about the future
I feel discouraged about the future
I feel I have nothing to look forward to
I feel that the future is hopeless and that things cannot improve

C. I do not feel like a failure
I feel I have failed more than the average person
As I look back on my life, all I can see is a lot of failures
I feel I am a complete failure as a person

D I get as much satisfaction out of things as I used to
I don't enjoy things the way I used to
I don't get real satisfaction out of anything anymore
I am dissatisfied or bored with everything

E. I don't feel particularly guilty
I feel guilty a good part of the time
I feel quite guilty most of the time
I feel guilty all of the time

F. I don't feel I am being punished
I feel I may be punished
I expect to be punished
I feel I am being punished

G. I don't feel disappointed in myself
I am disappointed in myself
I am disgusted with myself
I hate myself

H. I don't feel I am any worse than anybody else
I am critical of myself for my weaknesses or mistakes
I blame myself all the time for my faults
I blame myself for everything bad that happens

I. I don't have any thoughts of killing myself
I have thoughts of killing myself, but I would not carry them out
I would like to kill myself
I would kill myself if I had the chance

J. I don't cry any more than usual
I cry more now than I used to
I cry all the time now
I used to be able to cry, but now I can't cry even though I want to

K. I am no more irritated now than I ever am
I get annoyed or irritated more easily than I used to
I feel irritated all the time now
I don't get irritated at all by the things that used to irritate me

L. I have not lost interest in other people
I am less interested in other people than I used to be
I have lost most of my interest in other people
I have lost all of my interest in other people

M. I make decisions about as well as I ever could
I put off making decisions more than I used to
I have greater difficulty in making decisions than before
I can't make decisions at all anymore

N. I don't feel I look any worse than I used to
I am worried that I am looking old or unattractive
I feel that there are permanent changes in my appearance that make me look unattractive
I feel that I am ugly or repulsive looking

O. I can work about as well as before
It takes an extra effort to get started at doing something
I have to push myself very hard to do anything
I can't do any work at all

P. I can sleep as well as usual
I don't sleep as well as I used to
I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
I wake up several hours earlier than I used to and cannot get back to sleep

Q. I don't get more tired than usual
I get tired more easily than I used to
I get tired form doing almost anything
I am too tired to do anything

R. My appetite is no worse than usual
My appetite is not as good as it used to be
My appetite is much worse now
I have no appetite at all anyway

S. I haven't lost much weight, if any, lately
I have lost more than 5 pounds
I have lost more than 10 pounds
I have lost more than 15 pounds

T. I am no more worried about my health than usual
I am worried about physical problems such as aches and pains or upset stomach or constipation
I am very worried about physical problems and it's hard to think of much else
I am so worried about my physical problems that I cannot think of much else

U. I have not noticed any recent change in my interest in sex
I am less interested in sex than I used to be
I am much less interested in sex now
I have lost interest in sex completely

Appendix C: Self Description Questionnaire Items

1. I find many mathematical problems interesting and challenging.
2. Overall, I have a lot of respect for myself.
3. I get a lot of attention from members of the opposite sex.
4. I have trouble expressing myself when trying to write something.
5. I am usually pretty calm and relaxed.
6. I enjoy doing work for most academic subjects.
7. I am never able to think up answers to problems that haven't already been figured out.
8. I have a physically attractive body.
9. I have few friends of the opposite sex that I can really count on.
10. I am a good athlete.
11. I have hesitated to take courses that involve mathematics.
12. Overall, I lack self-confidence.
13. I find it difficult to meet members of the opposite sex whom I like.
14. I can write effectively.
15. I worry a lot.
16. I hate studying for many academic subjects.
17. I am good at combining ideas in ways that others have not tried.
18. I am ugly.
19. I am comfortable talking to members of the same sex.
20. I am awkward and poorly coordinated at most sports and physical activities.
21. I have generally done better in mathematics courses than other courses.
22. Overall, I am pretty accepting of myself.
23. I have lots of friends of the opposite sex.
24. I have a poor vocabulary.
25. I am happy most of the time.
26. I like most academic subjects.
27. I wish I had more imagination and originality.
28. I have a good body build.
29. I don't get along very well with other members of the same sex.
30. I have good endurance and stamina in sports and physical activities.
31. Mathematics makes me feel inadequate.
32. Overall, I don't have much respect for myself.
33. Most of my friends are more comfortable with members of the opposite sex than I am.
34. I am an avid reader.
35. I am anxious much of the time.
36. I have trouble with most academic subjects.
37. I enjoy working out new ways of solving problems.
38. There are lots of things about the way I look that I would like to change.
39. I make friends easily with members of the same sex.
40. I hate sports and physical activities.
41. I am quite good at mathematics.
42. Overall, I have a lot of self-confidence.

43 I am comfortable talking to members of the opposite sex.
44 I do not do well on tests that require a lot of verbal reasoning ability.
45 I hardly ever feel depressed.
46 I'm good at most academic subjects.
47 I'm not much good at problem solving.
48 My body weight is about right (neither too fat nor too skinny).
49 Other members of the same sex find me boring.
50 I have a high energy level in sports and physical activities.
51 I have trouble understanding anything that is based upon mathematics.
52 Overall, I have a very good self-concept.
53 I'm quite shy with members of the opposite sex.
54 Relative to most people, my verbal abilities are quite good.
55 I tend to be high-strung, tense, and restless.
56 I'm not particularly interested in most academic subjects.
57 I have a lot of intellectual curiosity.
58 I dislike the way I look.
59 I share lots of activities with members of the same sex.
60 I'm not very good at any activities that require physical ability and coordination.
61 I have always done well in mathematics classes.
62 Overall, nothing that I do is very important.
63 I make friends easily with members of the opposite sex.
64 I often have to read things several times before I understand them.
65 I do not spend a lot of time worrying about things.
66 I learn quickly in most academic subjects.
67 I am not very original in my ideas, thoughts, and actions.
68 I have nice facial features.
70 Not many people of the same sex like me.
71 I like to exercise vigorously at sports and/or physical activities.
72 I never do well on tests that require mathematical reasoning.
73 Overall, I have pretty positive feelings about myself.
74 I have had lots of feelings of inadequacy about relating to members of the opposite sex.
75 I am good at expressing myself.
76 I am often depressed.
77 I hate most academic subjects.
78 I am an imaginative person.
79 I wish that I were physically more attractive.
80 I am popular with other members of the same sex.
81 I am poor at most sports and physical activities.
82 At school, my friends always come to me for help in mathematics.
83 Overall, I have a very poor self-concept.
84 I am comfortable being affectionate with members of the opposite sex.
85 In school I had more trouble learning to read than most other students.
86 I am inclined towards being an optimist. 87 I get good grades in most academic subjects.
88 I would have no interest in being an inventor.

89 Most of my friends are better looking than I am.
90 Most people have more friends of the same sex than I do.
91 I enjoy sports and physical activities.
92 I have never been very excited about mathematics.
93 Overall, I have pretty negative feelings about myself.
94 I never seem to have much in common with members of the opposite sex.
95 I have good reading comprehension.
96 I tend to be a very nervous person.
97 I could never achieve academic honors, even if I worked harder.
98 I can often see better ways of doing routine tasks.
99 I am good looking.
100 I have lots of friends of the same sex.
101 I am a sedentary type who avoids strenuous activity.
102 Overall, I do lots of things that are important.
103 Overall, I am not very accepting of myself.

Appendix D: Informed Consent & Release of Information for a Study of Emotional and Motivational Adjustment to the First Year of College

RESEARCHERS**:** Joan M. Martin, Ph.D. and David A. Cole, Ph.D., Psychology Department, University of Notre Dame, Notre Dame, IN, 46556, 631-3322 and 631-6165.

PURPOSE: This is a study of students' emotional and motivational adjustment to their first year of college. In particular, we are interested in understanding individual differences in students' vulnerability to depression. We have designed this study to help us develop better methods of assessing areas of personal concern.

PROCEDURES: We will ask you to answer a battery of questionnaires about yourself, and we will give you a computerized task designed to test your memory and response speed to specific words and phrases. We will also ask you to give the First Year of Studies permission to release your SAT scores, and your first and second semester GPAs.

RISKS: The risk in this research is minimal, however some students may feel uncomfortable answering some of the questions. If you become uncomfortable at any point, you may refuse to answer a particular question, or withdraw from the study, without any negative consequences.

BENEFITS: You will be helping researchers and educators to understand better the causes of emotional and motivational problems/strengths in first year college students. You will also be helping the researchers develop new methods of assessing self-perception.

COST: There are no financial costs to you. Your time contribution will be approximately an hour and a half during the first semester, and you may be contacted to participate again during the second semester.

PARTICIPANT CONSENT: *please initial each box if you have read and agreed with the statement*

____ I understand that all information that I disclose will be considered confidential. This information will only be used for research purposes. I understand that no information with my name on it will be released to others without my consent.

____ I understand that I will be assigned a confidential ID number, and that this will be the only identifying information on the data collected about me. The file linking my identity with my ID number will be kept in a separate and secure location.

____ I accept the risk that I may feel uncomfortable answering some of the questions about my personal feelings or beliefs.

____ I understand that I am free to not answer any particular question or to withdraw from the study at any time without negative consequence to my record here at Notre Dame.

____ I give permission to the Notre Dame First Year of Studies Department to release my SAT or ACT scores and my first and second semester grade point averages (GPAs) to the above named researchers for use in the above described study.

____ I am at least 18 years of age and I agree to participate in this study.

Printed Name:
_____

Signature: _____Date:
_____

Appendix E

Summary of Regression Analysis for Trait Anxiety, State Anxiety, Depressive Symptoms, Anxiety, Perceived Competence, and the Interaction of Depressive Symptoms by Perceived Competence Predicting Free Responses.

Predictor	B(*SE*)	β	F	R^2
Hopes				
Mastery				.026
Intercept	.44 (.045)			
Trait anxiety	-.072 (.048)	-.123	2.193	
State anxiety	.023 (.047)	.044	.299	
Depressive Symptoms	.023 (.047)	.041	.245	
Competence	-.061 (.046)	-.106	1.721	
Depressive Symptoms x Competence	-.035 (.054)	-.050	.409	
Performance				.048
Intercept	.682 (.052)			
Trait anxiety	-.099 (.057)	-.143	3.052	
State anxiety	-.040 (.056)	-.058	.531	
Depressive Symptoms	.069 (.056)	.101	1.525	
Competence	.061 (.055)	.090	1.254	
Depressive Symptoms x Competence	-.089 (.064)	-.106	1.913	
Fears				

Mastery				.017
Intercept	.539 (.047)			
Trait anxiety	.017 (.051)	.027	.109	
State anxiety	.076 (.050)	.124	2.32	
Depressive Symptoms	-.006 (.050)	-.010	.014	
Competence	-.014 (.049)	-.023	.078	
Depressive Symptoms x Competence	.013 (.057)	.017	.050	
Performance				.012
Intercept	.989 (.062)			
Trait anxiety	-.024 (.067)	-.030	.126	
State anxiety	-.043 (.066)	-.054	.432	
Depressive Symptoms	.058 (.066)	.073	.759	
Competence	.042 (.065)	.053	.429	
Depressive Symptoms x Competence	.069 (.076)	.071	.834	