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by

Christina Arroyo-Giner

May 2013

STUDENTS' PERCEPTIONS OF A COLLEGE COURSE: CONTEXTUAL  
INFLUENCES ON MOTIVATION

A Dissertation Presented to the  
Faculty of the College of Education  
University of Houston

In Partial Fulfillment  
of the Requirements for the Degree

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### Abstract

Research on motivation is important for understanding student learning and the context in which students are taught (Pintrich, 2003). This research integrated different theoretical perspectives of motivation in an effort to identify contextual influences on motivational beliefs. Motivation constructs within expectancy-value, self-determination, interest, and achievement goal theory were explored. The purpose of the present study was to identify contextual features of a college course's climate that are related to students' motivational beliefs and self-reported grade for that course.

Participants were an ethnically diverse sample of 305 college students enrolled in a face-to-face section of six upper level psychology courses. Participants completed a survey in which they reported upon motivational beliefs and self-reported grade for a course. Participants reported on their subjective perceptions of that course's climate. Course climate is defined as the perceptions regarding the behaviors and beliefs of other course members.

Exploratory factor analyses using principal axis factoring with an oblique rotation were conducted to examine the extent to which eight hypothesized dimensions best represent a course's climate in terms of conceptual clarity and ease of interpretability. The solution ultimately chosen to best represent a course's climate included the following eight factors: autonomy support, performance avoidance goal structure, student relatedness, course situational interest, academic press, instructor organization, energy, and equity.

Hierarchical multivariate regressions results indicated that students' perceptions of a course's climate predicted self-reported self-efficacy, attainment value, utility value, personal interest, anxiety, mastery approach achievement goals, performance approach achievement goals, performance avoidance achievement goals, and self-reported grade for that course. For each motivational belief, a different pattern of significant individual climate predictors emerged.

Results of the present research reinforce the need to assess multiple aspects of the learning climate by adopting a multi-theoretical perspective. In addition to integrating a variety of motivational research traditions, the present study also incorporated classroom climate research. Suggestions for future research and practical implications for higher education are discussed. The assessment of the climate, at the course level, may be informative for higher education administrators, researchers, and instructors working to support students' academic success.

## Table of Contents

Chapter	Page
I. Introduction .....	1
Problem Statement .....	3
II. Review of Literature .....	5
Understanding Student Motivation .....	6
Student motivation broadly defined .....	6
Theoretical views of achievement motivation .....	8
Motivational Beliefs .....	9
Self-efficacy .....	10
Value .....	14
Attainment value .....	15
Utility value .....	17
Intrinsic value/personal interest .....	19
Achievement goals .....	21
Anxiety .....	24
Classroom Climate .....	26
Motivationally Relevant Aspects of a Course's Climate .....	31
Instructor organization .....	33
Instructor organization defined .....	33
Assessment of instructor organization .....	34
Empirical findings for instructor organization .....	35
Instructor support .....	36
Instructor support defined .....	36
Assessment of instructor support .....	36
Empirical findings for instructor support .....	37
Course situational interest .....	38
Course situational interest defined .....	38
Assessment of course situational interest .....	39
Empirical findings for course situational interest .....	40
Student relatedness .....	40
Student relatedness defined .....	40
Assessment of student relatedness .....	40
Empirical findings for student relatedness .....	41
Academic press .....	42
Academic press defined .....	42
Assessment of academic press .....	43
Empirical findings for academic press .....	43
Autonomy support .....	44
Autonomy support defined .....	44
Assessment of autonomy support .....	45
Empirical findings for autonomy support .....	46
Equity .....	47
Equity defined .....	47

Assessment of equity.....	47
Empirical findings for equity.....	48
Performance goal structure.....	48
Performance goal structure defined.....	48
Assessment of performance goal structure.....	49
Empirical findings for performance goal structure.....	50
Research Questions.....	50
III. Method.....	52
Participants.....	52
Materials.....	53
Course information.....	53
Course climate.....	55
Instructor organization.....	55
Instructor support.....	55
Course situational interest.....	56
Student relatedness.....	56
Academic press.....	56
Autonomy support.....	56
Equity.....	57
Performance goal structure.....	57
Personal motivational beliefs.....	58
Self-efficacy.....	58
Attainment value.....	59
Utility value.....	59
Personal interest.....	59
Mastery-approach goal.....	59
Performance-approach goal.....	60
Performance-avoidance goal.....	60
Anxiety.....	60
Self-reported grade.....	60
Procedure.....	61
Exploratory factor analyses method.....	63
IV. Results.....	65
Exploratory Factor Analyses.....	65
Descriptive Results.....	73
Bivariate analyses.....	73
Hierarchical Regressions Predicting Motivational Beliefs.....	81
Self-efficacy.....	83
Attainment value.....	84
Utility value.....	84
Personal interest.....	85
Anxiety.....	85
Goal adoption.....	86
Hierarchical Regressions Predicting Self-Reported Grade.....	87
V. Discussion.....	90
Motivationally Relevant Aspects of the Course Climate.....	90



Autonomy support. ....	90
Performance avoidance goal structure. ....	93
Student relatedness. ....	95
Course situational interest. ....	96
Academic press. ....	98
Instructor organization. ....	99
Energy. ....	101
Equity. ....	102
Course Climate Predicting Students' Motivational Beliefs and Self-Reported	
Course Grade. ....	103
Autonomy support. ....	103
Performance avoidance goal structure. ....	106
Student relatedness. ....	107
Course situational interest. ....	109
Academic press. ....	111
Instructor organization. ....	112
Energy. ....	114
Equity. ....	116
Limitations. ....	120
Implications for Practice. ....	121
Future Research Directions. ....	122
References. ....	126
Appendix A Demographics and Course Information. ....	151
Appendix B Classroom Climate Items. ....	154
Appendix C Personal Motivational Beliefs Items. ....	157

## List of Tables

Table	Page
1	Hypothesized Course Climate Aspects.....33
2	Target Course Enrollment of Sample and Section Size.....54
3	Pattern Matrix Factor Loadings for Principal Axis Factoring with Oblique Rotation.....71-72
4	Summary of Intercorrelations, Means, and Standard Deviations for Course Climate, Motivational Beliefs, and Self-Reported Grade.....79-80
5	Hierarchical Multiple Regression Analyses Predicting Motivational Beliefs.....88
6	Hierarchical Multiple Regression Analyses Predicting Self-Reported Grade.....89

## List of Figures

Figure		Page
1	Hypothesized Relation Between Person, Environment, and Behavior.....	6

## **Chapter I**

### **Introduction**

A postsecondary education shapes the possibilities and opportunities for achieving success in adulthood (Eccles, Vida, & Barber, 2004). Some benefits of higher education include higher income, greater employability, and greater likelihood of receiving health and pension benefits (Baum, Ma, & Payea, 2010). Other benefits, less quantifiable but also very important include the knowledge, personal fulfillment, and broadening of horizon that a college graduate can enjoy. The benefits of earning a higher education also impact those who interact with the college graduate and ultimately our society as a whole. Baum et al. (2010) reported that college-educated parents were more likely to engage in educational activities with their children, which better equipped their children for school. In order to receive the benefits associated with higher education, students must perform well in their college courses to ultimately obtain the sought after degree.

Student motivation is important because of its relation to achievement and learning (Linnenbrink & Pintrich, 2002). Educators seeking to promote an optimal learning environment may find achievement motivation and classroom climate research of great relevance. Students' perceptions of a college course are important for two primary reasons: (1) climate perceptions may shape their own motivation for that course, and (2) the climate's measurement may allow educators to evaluate the climate and decide whether modifications or interventions are necessary.

Research using a broad approach in assessing the learning environment utilizing multiple motivational theoretical frameworks is scarce. The present research will provide

a base for which motivationally relevant experiences within a college course are assessed. Students' experiences within a college course are believed to play a role in shaping their motivation for the course (Turner & Patrick, 2008).

Student motivation refers to the willingness to begin and persist at a goal-directed activity (Anderman & Wolters, 2006; Schunk, Pintrich, & Meece, 2008; Wolters, 2003). Empirical evidence suggests students' motivation is related to their academic and social functioning (Wentzel & Wigfield, 2007). Students' beliefs about their own motivation are associated with a wide range of positive academic outcomes such as increased effort (Schraw, Horn, Thorndike-Christ, & Bruning, 1995), persistence (Wolters, 2004), self-regulation (Pintrich, 1999; Pintrich & De Groot, 1990), strategy use (Liem, Lau, & Nie, 2008; Pintrich & De Groot, 1990; Wolters, 2004), positive affect (Pintrich, 2000), achievement scores (Lau & Nie, 2008; Liem, et al., 2008), grades (Bong, 2001), and college enrollment (Feather, 1988). Additionally, motivational beliefs have been related to perceptions of the social interactions within the learning environment such as perceptions of teacher support (Patrick, Mantzicopoulos, Samarapungavan, & French, 2008; Patrick, Ryan, & Kaplan, 2007), class belonging (Freeman, Anderman, & Jensen, 2007), school belonging (Anderman & Anderman, 1999), and positive school feelings (Witkow & Fuligni, 2007).

Classroom climate research has also advanced our knowledge of student functioning within the learning environment. Students' and teachers' perceptions of the social and psychological environment are the focus of classroom climate research (Fraser, 1989). Developing measurements to assess perceptions of the learning environment are an integral feature of this line of inquiry (Fraser & Fisher, 1982; Fraser & O'Brien, 1985;

Wolters & Gonzalez, 2008). Classroom climate research has shown that specific aspects of the course are related to students' motivation. Students' motivational beliefs, specifically their judgment of ability to master academic tasks, were positively associated with multiple aspects of the classroom environment (Dorman, 2001; Dorman & Adams, 2004).

This dissertation is comprised of five chapters. Chapter one presents a brief introduction and the problem under investigation. The objective of this section is to provide the rationale regarding the practical significance of this research. Next, chapter two provides a review of relevant literature. The overall objective for the literature review is to identify key dimensions of the learning environment believed to have important implications for student motivational beliefs within that context. The literature review draws primarily upon two research traditions: (1) achievement motivation and (2) classroom climate. This section ends with the presentation of the research questions. The third chapter provides an overview of the method used to investigate the questions posed. The procedures, sample, and measures used for data collection purposes are described. The fourth chapter presents the results including descriptive statistics, bivariate correlations, a final solution from the exploratory factor analyses, and regression analyses. The fifth chapter presents a discussion of the results. The limitations of the present research study and suggestions for future research are also provided in the final chapter.

### **Problem Statement**

How do educators identify motivationally relevant aspects of the learning environment when there are different theories of motivation and several aspects of the

classroom climate? Identification of the features of the instructional context that serve to support optimal student motivation has been an important area of inquiry (Barron & Hulleman, 2006; Murphy & Alexander, 2000). Understanding how to support students' achievement motivation is important considering the critical lifelong implications of an individual's educational attainments in this society.

Motivation research and classroom climate research are both interested in the contextual features of the learning environment. There is a need to assess the perceptions of the course climate utilizing a multi-dimensional instrument. This research will (1) develop an instrument to assess college students' perceptions of a college course climate and (2) utilize the newly developed instrument to assess the extent that perceptions of the motivationally relevant aspects of a course's climate are associated with students' self-efficacy, attainment value, utility value, personal interest, anxiety, achievement goals, and self-reported grade for that course.

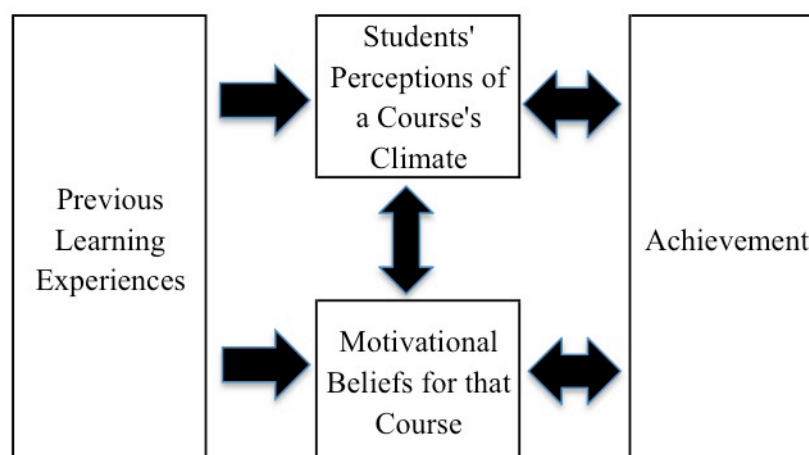
## **Chapter II**

### **Review of Literature**

The purpose of the present study is to extend previous research on college student motivation. A multi-dimensional course climate instrument was constructed and relations among various aspects of a college course's climate were explored. The present study also investigated the extent to which course climate dimensions could predict motivational beliefs and self-reported grade for that course.

The following review of the literature provides support for the need to develop a motivationally relevant multi-dimensional course climate instrument. This review provides rationale for the present research using various constructs and empirical findings related to student motivation. The review begins with a broad definition of student motivation. Then, the motivational beliefs examined in this study are defined and described. Additionally, for each of the motivational beliefs, prior empirical results showing relations to important academic outcomes are reviewed. Next, prior empirical findings are discussed to support the contention that the learning environment may serve to facilitate or hinder students' motivational beliefs. The review concludes with identification of the aspects of a course's climate believed to influence student motivation for the course.





*Figure 1.* Hypothesized Relation Between Person, Environment, and Behavior. Model of students' perceptions of a course's climate and motivational beliefs.

### Understanding Student Motivation

**Student motivation broadly defined.** Motivation broadly defined as "...the process whereby goal-directed activity is instigated and sustained." (Schunk et al., 2008, p. 4). Motivation is a concept that allows us to understand human behavior (Barron & Hulleman, 2006). Theories of achievement motivation attempt to explain outcomes such as students' choice of activities, level of exerted effort, and persistence on academic activities (Linnenbrink & Pintrich, 2002; Pintrich, 2003; Wentzel & Wigfield, 2007; Wigfield & Eccles, 1992).

Motivation is amenable to change; a decrease or increase in one's motivation is certainly possible (Linnenbrink & Pintrich, 2002). Motivation is not due to personal factors alone, but learning environment/contextual factors are also pivotal (Patrick, Ryan, & Kaplan, 2007). The instructional context has been found to play an instrumental role in

shaping students' motivation (Ryan & Patrick, 2001; Wentzel, 1997). Specifically, students' perceptions of the learning environment are believed to influence their attitudes, behaviors, and achievement (Schweinle, Meyer, & Turner, 2006; Turner & Meyer, 2000). Aspects of the learning environment assumed to affect students' motivation include relationship with teacher (Wentzel, 1997), relations with peers (Goodenow, 1992), autonomy-supportive instruction that supports students' internal desire for learning (Skinner, Furrer, Marchand, & Kindermann, 2008), teachers communication regarding the purposes and meanings for engaging in academic tasks (Turner & Patrick, 2004). Therefore, an understanding of students' motivation should examine both personal factors and environmental factors (Turner & Patrick, 2004).

Declines in motivation have been explored during students' transition from elementary to secondary school. The learning environment has been demonstrated to be a critical influence on middle school students' declining motivation (Anderman & Maehr, 1994; Juvonen, 2007). A general consensus of this research indicates that motivational declines are largely due to differences in instructional practices and educational policies between elementary and middle schools. When students' motivation wanes, it is important for educators to examine how aspects of the learning context may be contributing to poor academic functioning (Barron & Hulleman, 2006). An educator that can recognize these aspects can take appropriate action to redirect the motivational climate.

Student motivation is important for educators to consider because it is reciprocally related to learning and performance (Pintrich, 2003) because of its influence on what and how material is to be learned (Covington, 2000; Cordova & Lepper, 1996).

Understanding motivation can provide educators with knowledge about creating optimal learning conditions (Hulleman, Durik, Schweigert, & Harackiewicz, 2008). Individual differences in motivation play a significant role in shaping student persistence, effort, and choice to engage in academic tasks.

**Theoretical views of achievement motivation.** There are many models of motivation that are relevant to the understanding of student learning such as: attribution theory (Weiner, 2000, 2005), achievement goal theory (Ames, 1992; Covington, 2000; Elliot & McGregor, 2001; Hulleman, Schrage, Bodmann, & Harackiewicz, 2010; Kaplan & Maehr, 2007), self-determination theory (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000), self-efficacy (Bandura, 1993), interest (Ainley, 2006; Ainley, Hidi, & Berndorff, 2002; Hidi & Renninger, 2006), and contemporary expectancy-value theory (Eccles & Wigfield, 1995, 2002; Wigfield & Eccles, 1992; 2000). Motivational theories attempt to answer questions about what gets individuals energized to work toward activities or tasks (Pintrich, 2003). The focus on explaining and predicting motivated behaviors vary by theoretical perspective. However, one aspect common to all is that students' motivational beliefs have been linked to learning and performance (Hulleman, et al., 2008). Equally important, contextual features of the learning environment are related to students' motivational beliefs. Pintrich (2003) claimed that it is more productive to attempt to understand multiple pathways through which different personal and contextual factors interact to generate different patterns of motivated behavior. Along this line of reasoning, the next section will examine different motivational beliefs and then discuss hypothesized motivationally relevant aspects of a college course climate.

## **Motivational Beliefs**

Achievement motivation research has focused on students' beliefs regarding achievement and beliefs about the learning context (classroom or school-wide) that serve a role in motivating them in that context (Pintrich, 2003). There is great wealth of theoretical and empirical work documenting the importance of students' own competence beliefs, attributions, interests, goals, values, and affect have on engagement, learning, and achievement (Anderman & Wolters, 2006; Linnenbrink & Pintrich, 2002). Pintrich (2003) identified five basic families of social-cognitive constructs that have been the focus on the most recent research on student motivation in classroom contexts: (1) adaptive self-efficacy and competence beliefs, (2) adaptive attributions and control beliefs, (3) higher levels of interest and intrinsic motivation, (4) higher levels of value, and (5) goals motivate and direct students. In the present research study, only four of the five basic families of constructs will be explored: self-efficacy, value, interest, and goals. Adaptive attributions and control beliefs are not explored in the present study because the focus of this research is on students' perceptions of others behaviors and beliefs as occurring broadly in a course. Assessment of attributions would require measurement of students' own personal beliefs regarding reasons why specific outcomes occur.

An investigation that incorporates several of these constructs will be valuable in the understanding of motivation (Hulleman, et al., 2008). Optimal motivation is supported when students' find the content meaningful, interesting, and hold positive competence beliefs. Additionally, the achievement goals students adopt for engaging in academic tasks will be related to the instigation and vigor in which they engage with academic tasks.

**Self-efficacy.** One cluster of concepts most widely studied in achievement motivation is identified by terms such as confidence, perceived ability, self-concept of ability, self-efficacy, expectancy for success, and academic efficacy (Bandura, 1993; Nicholls, Cheung, Lauer, & Patashnick, 1989; Pajares & Graham, 1999; Ryan & Patrick, 2001, Schunk, 1991). A general principle, which guides them all, is that students who believe they are able to do well are more likely to be motivated than students who do not possess adaptive competence beliefs (Pintrich, 2003). Self-efficacy is defined as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (Bandura, 1986, p. 391). Self-efficacy was chosen because of the well-defined nature of this construct to highlight the specific and situational focus (Murphy & Alexander, 2000), which parallels the situational focus of this research. Self-efficacy is not a broad reflection of ability, but rather a reflection regarding a specific task or activity. Bandura (1993) claimed that efficacy beliefs influence how people feel, think, behave, and motivate themselves. Self-efficacy beliefs are specific and situational judgments of capabilities (Linnenbrink & Pintrich, 2003).

Self-efficacy beliefs have been found to be a powerful predictor of performance for students of all ages (Chemers, Hu, & Garcia, 2001; Fast et al., 2010; Pajares & Graham, 1999; Zimmerman & Kitsantas, 2005). Students who are confident in their ability to do well perform better than their less confident peers. The advantageous nature of positive self-efficacy beliefs on learning and performance has been associated with heightened behavioral, cognitive, and motivational engagement (Linnenbrink & Pintrich, 2003). Behaviorally, self-efficacy beliefs influence the activities that individuals choose

to participate in, their level of effort, whether or not they persist at that activity or task (Bandura & Schunk, 1981; Eccles & Wigfield, 2002; Schunk, 1991). Cognitively, self-efficacy beliefs are related to students' use of metacognitive self-regulatory strategies such as planning by setting goals, monitoring learning, and regulating cognition (Patrick et al., 2007; Pintrich & De Groot, 1990) as well as using cognitive learning strategies such as rehearsal, elaboration, and organizing material to be learned (Pintrich, 1999; Pintrich & De Groot, 1990). Use of metacognitive and cognitive learning strategies are related to performance because these strategies are enacted to help encode, remember, and comprehend information (VanderStoep, Pintrich, & Fagerlin, 1996). Last, in regards to motivational engagement, self-efficacy beliefs are related to affective or emotional experiences, interests, and value (Linnenbrink & Pintrich, 2003; Zimmerman, 2000). Feeling confident in one's ability may lead to positive emotions such as pride and help to support other adaptive motivational beliefs.

Lorsbach and Jinks (1999) claim that self-efficacy is strongly linked to perceptions of the learning environment because of the personal relationships, a focus on one's personal appraisals of ability and growth, and the level of clarity of purpose of the learning context. The four key types of influences on self-efficacy beliefs are found in a learning environment. The four most key types of influence on students' self-efficacy are enactive attainment, vicarious experience, verbal persuasion, and physiological states (Usher & Pajares, 2008; Schunk, 1991; Zimmerman, 2000).

Enactive attainment or personal prior experiences is an influential source of knowledge to frame perceptions of competence for a given task. Students enter the learning context with personal prior experiences that are used to make judgments

regarding their confidence in ability. It is likely that students' prior experiences color the way in which they perceive the learning environment.

Vicarious experience or observing the experiences of another person can also influence self-efficacy beliefs. Vicarious experiences within a learning environment would also influence self-efficacy beliefs because students will assess their capabilities in relation to the attainments of others (Bandura, 1993), especially their peers.

Verbal persuasion by a credible person may impact a student's self-efficacy beliefs. Students may form self-efficacy beliefs from the conversations with the teacher and with fellow peers. Others in the course may serve to support self-efficacy beliefs via encouragement, while others may serve to decrease it by providing critical and harsh feedback.

Physiological reactions may influence self-efficacy beliefs. For example, students who become stressed, worried, or anxious when thinking about the course may perceive poor competence. Experiences in the learning environment that arouse anxiety will weaken students' sense of efficacy (Bandura, 1993).

Eccles (2005) claimed that when initially forming efficacy beliefs, an individual primarily relies on prior experiences, abilities, and attitudes. However, as experiences within a course develop such as task completion, evaluations, and relations with others begin to take shape, these situational factors within the environment become increasingly important. The personal and situational factors serve as information for students from which they assess how well they are learning. Motivation is enhanced when students perceive that they are efficacious and making gains in learning (Schunk, 1991).

Therefore, it is possible that the situational factors, or students' perceptions of the learning environment may affect efficacy beliefs (Fast et al., 2010).

Bong's (2001) longitudinal investigation of college students' motivation, course performance, and future enrollment intentions found that course specific self-efficacy beliefs assessed after the midterm predicted final exam performance and future course enrollment intentions. Self-efficacy beliefs before the midterm did not predict final exam performance. Later, after students took the midterm exam, their self-efficacy beliefs were able to predict final exam performance. Along a similar line of inquiry, Shim and Ryan (2005) found that college students' self-efficacy beliefs were increased upon receipt of higher graded performance feedback. These findings suggest that students may use performance feedback form judgments regarding their competence.

These findings at a basic level support the malleability of efficacy beliefs. However, performance feedback was the only situational factor assessing the molding of self-efficacy beliefs, which later related to actual performance. While performance feedback certainly is an important aspect of the context that may serve to increase or decrease self-efficacy beliefs for that course, there are likely other aspects of the course that are important.

Other classroom contextual factors found related to self-efficacy beliefs include: goal structures (Wolters, 2004), challenge (Fast et al., 2010), perceived supportive relations to peers (Freeman et al., 2007), perceived autonomy support (Black & Deci, 2000; Garcia & Pintrich, 1996) and instructor organization (Dorman & Adams, 2004; Freeman et al., 2007). There is a scarcity of research that assesses these multiple aspects of the context within one research design. It is unknown which aspects of a course may



play a more pronounced role in influencing college students' self-efficacy beliefs. The beneficial links between self-efficacy to learning and performance suggest that identifying motivationally relevant aspects of the context is a worthwhile endeavor.

**Value.** While perceptions of competence such as self-efficacy can certainly motivate students to learn, students must also believe the task is important (Pintrich, 2003). The contemporary model of expectancy-value focuses on social psychological reasons for achievement related behaviors (Eccles, 2005; Wigfield & Eccles, 1992). This theory emphasizes the importance of two components: expectancies for success and value. Expectancies for success in the expectancy-value model and self-efficacy as defined by Bandura (1986) are closely related because they are both centered upon beliefs regarding one's ability (Wigfield & Eccles, 2000). Competence related beliefs are dependent upon one's confidence and the estimation of task difficulty (Eccles, 2005). While possessing adaptive competence beliefs are important, one should also value the activity for optimal motivation. Based on the value of the task, a person will either approach the task (positive value) or avoid it (negative value) (Wigfield & Eccles, 1992). Individuals may feel that they can be successful at a task but choose not to engage in it because they do not find it valuable or meaningful (Barron & Hulleman, 2006; Wigfield, Hoa, & Klauda, 2008).

The level of which an individual finds engaging in a task meaningful, important, or valuable is believed to influence motivation. Task value has been conceptualized as possessing four components: (1) attainment value, (2) utility value, (3) intrinsic interest, and (4) cost belief (Eccles & Wigfield, 1995; Wigfield & Eccles, 2000; Wigfield et al., 2008). The consequences of values are assumed to be both motivational and behavioral

(Eccles & Wigfield, 1995). Only the first three are relevant to this study and are reviewed in the present study. The component of cost belief was not measured because all the students in the present study were already enrolled in a course. Thus, the students already had made the decision that engaging in the course would be worthwhile.

***Attainment value.*** Attainment value is defined as personal importance attached to participating on a task and doing well (Eccles, 2005; Wigfield & Eccles, 2000).

Engaging in an activity is valuable when it can confirm one's self image or provide an avenue to demonstrate one's ideal self-schema (Wigfield & Eccles, 1992). Engaging in activities and tasks that can provide an avenue to fulfill one's self-image possess high attainment value. It is believed that individuals are more likely to engage in tasks with higher subjective value than tasks with lower value.

There is empirical evidence that supports the conceptual distinction between attainment and utility value (Eccles & Wigfield, 1995; Hulleman et al., 2008). However, researchers investigating the role of value have not often distinctly assessed attainment value. Rather, a more general task value construct has been typically assessed that may include items tapping utility value. For example, Bong (2001) found that task value was able to predict college students' midterm scores and course enrollment intentions. Bong assessed value using three items meant to assess perceived importance, perceived usefulness, and interest in the course. Feather (1988) found that value was related to actual future course enrollment. Liem et al. (2008) found value was positively related to the achievement goals students held, self-efficacy, and strategy use. Task value was also negatively related to task disengagement indicating that as students' perceived value

increased, the less likely they reported giving up during boring or difficult academic tasks.

Task value and self-efficacy was found to predict cognitive strategy use and regulatory strategy use, but only self-efficacy could predict academic performance (Wolters & Pintrich, 1998). These findings suggest that value of an activity is related to other motivationally relevant beliefs, especially perceived ability. It is likely that these motivation beliefs shape how students engage with the learning activity, particularly strategy use.

Students' evaluation of their competence, difficulty of activity, and interest in activity will probably shape their beliefs regarding the value in that activity. Indeed, Feather (1988) found that higher value was related to higher competence beliefs. Feather concluded that it was plausible that ability and competence beliefs stimulate interest or that interest and value help to determine ability and competence.

Two broad sets of influences proposed within the expectancy-value model on academically related outcomes are: (1) psychological factors and (2) social factors (Eccles et al., 2004). Psychological factors include personal beliefs and/or reflections about abilities, probability of success, and task values. Social factors believed to exert influence upon students' academic outcomes include socializer's beliefs, expectations, attitudes, and behaviors (Eccles, 2005). Significant socializers include parents, teachers, and peers. Wigfield et al. (2008) claim that valuing a task is dependent upon the nature of the task/activity and the context in which it occurs. In a classroom context it is plausible that the specific activity, the teacher, and other students play a role in shaping one's task value.

Although there is ample evidence to support the contention that possessing task value is beneficial, there is a scarcity of research that clearly distinguishes between specific value components (Vansteenkiste et al., 2004). Previous research has assessed value broadly, generally using a composite task value measure. Additionally, identification of influential aspects of a learning environment for shaping students' attainment value is needed.

***Utility value.*** Another type of task value is utility value. Utility value is defined as beliefs regarding how useful a task is or how well engaging in the task fits into meeting future plans or goals (Eccles, 2005; Wigfield & Eccles, 2000). Whereas attainment value focuses primarily on how valuable an activity or task is perceived as personally meaningful at that time, utility value is focused on how valuable engaging in that task is for the future. Utility value emphasizes the extrinsic reasons why someone might value participating in the task (Wigfield & Eccles, 1992). Engaging in a task may not be interesting to an individual but still have positive value because it will facilitate meeting a future goal (Vansteenkiste et al., 2004). It is likely that a person would engage, be persistent, and be effortful for completing activities that they perceive would be important and useful for the future. This is especially the case when activities are perceived as irrelevant, difficult, and/or boring.

Eccles and Wigfield (1995) found that adolescents' task value perceptions could be distinguished between attainment and utility value using confirmatory factor analyses, as did Hulleman et al. (2008) using a college sample. In both these studies, attainment value and utility value were found to be conceptually and empirically distinct, but yet strongly positively related. Additionally, both value components were related to ability

beliefs. Given this finding, Eccles and Wigfield argued that future research should assess the development of perceived task values and how the components of task values become differentiated from each other. Indeed, there is a wealth of research on task value more broadly. More research is needed that differentiates between attainment value and utility value. Eccles and Wigfield hypothesized that utility value is more likely to be influenced by external factors. Wigfield and Eccles postulated that teachers approach to the content taught and how they interact with students may indirectly influence how students come to value that subject area.

Obtaining a college degree may be viewed as valuable or necessary in order to reach future career goals and/or educational aspirations. Obtaining a college degree may hold high utility value. The high utility value may influence students to persist at the university. There is a scarcity of research that addresses which specific aspects of experiences within one particular course would be related to students' utility value for that course. One study that specifically has assessed utility value with a college sample is a study conducted by Hulleman et al. (2008). Using a sample of students enrolled in a lecture introductory psychology course, researchers found that utility value was a unique predictor of interest in the course. Also, perceiving utility value in the course was positively associated with students' final course grade. These findings suggest that utility value is beneficial for students because these beliefs play an important role in the development of personal interest and increased performance. Future research is needed to investigate which perceptions of a learning environment are related to students' utility value, especially at the college level.

***Intrinsic value/personal interest.*** Intrinsic value in the expectancy-value theory is conceptually similar to personal interest (Pintrich, 2003). Intrinsic value or personal interest reflects the enjoyment one gets from engaging in the task (Wigfield et al., 2008). Interest can be defined as a relation between a person and a content area that elicits focused attention and engagement (Durik & Harackiewicz, 2007). Interest can also be thought of as both a state and as a disposition of a person that have cognitive and affective components (Hidi & Harackiewicz, 2000). Interest is viewed as enjoying and willful engagement with an activity. Interest has been found to influence student attention, goals, and levels of learning (Hidi & Renninger, 2006). Interest also was found to increase cognitive and affective functioning, and persistent effort (Ainley et al., 2002). Interest, a generally pleasant subjective experience, can serve to promote continued exploration of the activity for its own sake.

The most commonly researched forms of interest are situational and personal (Schraw, Flowerday, & Lehman, 2001). Situational interest is a temporary state of focused attention, increased cognitive functioning, curiosity, and affective involvement (Schiefele, 2009). Situational interest is often triggered by external factors in the learning environment, representing a temporary and context dependent form of interest. Arousing students' curiosity, using fantasy, and making material personally relevant for students may trigger situational interest (Sansone & Thoman, 2005). Personal interest is conceptualized as relatively stable and develops over time resulting in increased knowledge, value, and positive feelings regarding a particular topic (Hidi & Harackiewicz, 2000). Although both forms of interest are conceptually distinct, they are believed to influence each other's development (Hidi & Harackiewicz, 2000).

Researchers have argued for the importance of situational interest when students do not possess personal interest (Ainley et al., 2002). Hidi and Renninger (2006) proposed a four-phase model of interest development where situational interest is externally supported by the context and/or others and serve to support and develop personal interest. Situational interest is triggered by the learning context or activity through “catch” and “hold”. Catch refers to capturing or focusing student attention on instructional materials or content matter. Hold interest represents situational factors that can sustain interest, likely as a result from making learning material meaningful (Hidi & Harackiewicz, 2000). Courses that are perceived by students to be interesting and enjoyable may serve to promote student motivational engagement for the course.

Thoman, Sansone, and Pasupathi (2007) claim that the social context can serve as a source of interest during activity engagement, but it can also serve to affect interest and motivational regulation beyond the immediate activity through social processes such as through conversations with others about the task. Thoman et al. (2007) write, “...the role of social construction, shared reality, and representation of interest experience may have implications for the development of individual interest” (p. 365). Therefore, even if students may not find the content personally interesting, a climate that can catch students interest by may lead to more pronounced personal interest.

Focused attention, increased cognitive and affective functioning, and persistent effort characterize personal interest. Interest in a task or activity is viewed as adaptive for academic functioning (Ainley et al., 2002; Renninger & Hidi, 2011). College students’ interest in the course was found related to their use of cognitive strategy use, specifically elaboration and rehearsal, performance expectations at the beginning of the course and

mid-term semester performance, final grade in the course and subsequent course enrollment in that domain (Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000).

**Achievement goals.** Students' achievement goals or reasons for engaging in academic tasks serve to instigate and direct actions, therefore are also important to the understanding of student motivation (Ames, 1992; Barron & Harackiewicz, 2001; Pintrich, 2003). Achievement goals are the purposes for why and how that person behaves in a motivated manner, as goals are competence strivings (Hulleman et al., 2008; Kaplan & Maehr, 2007). Research within this theoretical framework has evolved, and different labels have been used to describe similar or the same construct (Hulleman et al., 2010). Originally, two kinds of achievement goals were identified (Law, Elliot, & Murayama, 2012). Over time the number of goals have increased to extend and clarify the achievement goals (Elliot, & Murayama, & Pekrun, 2011).

Originally, the two achievement goals were mastery and performance goals, although the labels used to describe these goals varied (Church, Elliot, & Gable, 2001; Elliot, 1999). Mastery goals (other labels include learning or task goals) were characterized by competence strivings for skill development or task mastery (Huang, 2012). Performance goals (other labels include relative ability or ego-involvement goals) were characterized by normative competence strivings (Huang, 2012). Contradictory findings, especially in regards to performance goals lead to the development of a trichotomous framework containing three goals: mastery approach, performance approach, and performance avoidance goals (Elliot, 1999). The further refinement within goal theory led to the creation of the 2 x 2 goal framework (Elliot & McGregor, 2001; Elliot & Murayama, 2008). The fourth goal added in this framework, mastery avoidance,



will not be assessed in the present study, therefore only a discussion of the three goals in the trichotomous framework is explored.

The trichotomous framework expanded upon the original model by distinguishing between approach and avoidance. Mastery approach goals are focused upon engaging in academically related tasks to learn, develop one's ability, and understand the material (Conley, 2012). In contrast, performance goals are focused upon demonstrating competence to others. Performance approach goals are focused on demonstrating high ability to others, whereas performance avoidance achievement goals are also concerned with competence, however the motive is on avoiding a demonstration of lack of ability.

The achievement goals students adopt lead to their affective and cognitive involvement with that task (Pintrich, 2000). Adoption of mastery approach goals have been related to positive outcomes such as interest and utility value (Hulleman et al., 2008), performance and positive school feelings (Witkow & Fuligni, 2007), self-efficacy and task value (Liem et al., 2008), strategy use, effort, and persistence (Wolters, 2004), and lecture engagement (Church et al., 2001). Performance approach goals have been related to a variety of outcomes such as performance (Hulleman et al., 2008; Witkow & Fuligni, 2007), study time (Witkow & Fuligni, 2007), as well as both deep and surface strategy use (Liem et al., 2008). Performance approach goals have also been found related to self-efficacy and task value similarly to mastery approach goals, but the relation is weaker (Liem et al., 2008). Adoption of performance avoidance achievement goals have been consistently linked with maladaptive outcomes such as: poor performance (Church et al., 2001), task disengagement (Liem et al., 2008), anxiety and hopelessness (Pekrun, Elliot, & Maier, 2006), and avoiding seeking help (Karabenick,

2004). The achievement goals students adopt have been related to a variety of important educational outcomes (Conley, 2012).

The instructional context is believed to have a profound influence on the achievement goals students adopt (Church et al., 2001; Harackiewicz & Linnenbrink, 2005; Schwinger & Stiensmeier-Pelster, 2011; Urdan, 2004). The goals adopted by students are shaped by the instructional context. The context of the classroom may also emphasize goals to students. The goal structure of a given classroom, the goals as perceived by students, are shaped by the prevailing instructional policies and procedures emphasized within that context (Wolters & Daugherty, 2007). The goal structures that have been examined are performance goal structure and mastery goal structure (Urdan & Schoenfelder, 2006; Wolters, 2004). Students' perceptions of a performance goal structure are characterized as classrooms that stress the importance of ability and social comparisons. Students may perceive that the classroom or school environment encourages and rewards students that are successful in competitive activities. Students may also perceive that getting good grades and doing well on standardized tests compared to others is emphasized and rewarded. In contrast, a mastery goal structure emphasizes the importance of learning, effort, and self-improvement.

Some factors to consider when evaluating the goal structure of any given classroom are the design of the tasks and learning activities, authority, recognition, grouping, evaluation practices, and use of time (TARGET) (Ames, 1992; Maehr & Anderman, 1993; Meece, Anderman, & Anderman, 2006). The TARGET system can be used to assess students' subjective perceptions of the goal structure. Learning activities that are perceived as being meaningful varied, challenging, encourage students to set

short-term goals, and facilitate the development of learning strategies are believed to elicit student perceptions of a mastery goal structure. Student perceptions of their ability to make some choices will support their need for autonomy and also support student perceptions of a mastery goal structure. Student evaluations focused on improvement and effort in a private fashion will also likely facilitate student perceptions of a mastery goal structure because normative comparisons are not emphasized (Ames, 1992).

**Anxiety.** Linnenbrink (2006) stated that affect is critical to understanding educational experiences. Anxiety is viewed as a negative or unpleasant affect or emotional reaction (Linnenbrink & Pintrich, 2002). An anxious reaction to an academic activity is negatively related to adaptive functioning because it has been found to interfere with attention and learning processes thereby impairing performance (Wigfield & Meece, 1988). In a related manner, detriments to working memory has been found when students experience anxiety. Students' perceptions of the classroom environment are thought to influence affect, via the achievement goals they adopt in that context. There is empirical evidence to suggest that adoption of some achievement goals are related to anxiety. For example, Linnenbrink, Ryan, and Pintrich (1999) found that students who adopted mastery achievement goals experienced less negative affect. Students who are focused on learning and understanding experienced less frustration, annoyance, and anxiety. This lower sense of negative affect (unpleasant response) seemed to enhance working memory functioning. However, students who adopted performance goals experienced more negative affect. Students who were concerned with demonstrating ability to others were more likely to have adverse affective reactions.

In addition to impaired cognitive performance due to experiencing negative affect, detriments to motivational beliefs have also been found. Students who reported negative affect were less likely to find content valuable (Wigfield & Meece, 1988). The degree to which an individual experiences anxiety may play a role in shaping their value for an activity (Wigfield & Eccles, 1992). Wigfield and Eccles postulated that the more students become anxious about engaging in a certain activity, the more they may try to devalue the activity as a way to reduce anxiety. Conversely, the prospect of failure at a highly valued activity will presumably lead to greater anxiety.

In addition to the maladaptive relation found between anxiety and value, similar patterns have been found with competence related beliefs. Wigfield and Meece (1988) found that students who indicated a greater level of negative affect were more likely to report lower levels of perceived ability. Bandura (1993) postulated that efficacy plays a central role in anxiety arousal. For example, the more efficacious one feels about their capabilities, the less likely they are to experience worry and distress. Bandura claimed that students who have low sense of efficacy for academic demands are most vulnerable to experience anxiety. When students think about their incompetence for a task, thoughts of fear are generated which increases their level of anxiety (Bandura, 1977).

Students' perceptions of the context may shape the degree to which anxiety is experienced. Frenzel, Pekrun, and Goetz (2007) found that students who perceived their course highly in terms of quality of instruction (teacher presses students to understand material) and peer esteem (students in this class think the content is cool) reported a higher sense of enjoyment for the course. The students also rated the experiences of

anxiety, anger, and boredom lower. These findings suggest that both the instructor and classmates in a course serve to influence emotions.

The learning environment can shape student motivation, facilitate or undermine it, by emphasizing messages about the purposes of achievement, the quality of social interactions, the degree to which students are provided opportunities to take ownership over their own learning, and how students are encouraged to think about their academic abilities (Urdu & Schoenfelder, 2006). It is also probable that these messages regarding learning and achievement influence students' motivational beliefs. Thus, while students bring pre-existing personal motivation, the learning climate has been found to shape motivational beliefs for the course. Students' beliefs about their ability, value, interest, and affect regarding learning tasks are not fixed; rather they are sensitive to contextual features of the classroom (Linnenbrink & Pintrich, 2001). Certain aspects of the course may be particularly salient for affecting students' motivational beliefs for the course.

### **Classroom Climate**

Classroom climate is defined as the dynamics, interactions, and behaviors of classroom participants as perceived by other classroom members (Fraser, 1989). The terms "classroom climate" and "classroom culture" are not interchangeable because of a subtle distinction. Van Houtte (2005) urges researchers for conceptual clarity in defining these two terms. Climate is viewed in terms of shared perceptions, while culture emphasizes shared beliefs. Therefore, while climate is based on what individual members perceive about all classroom participants ("students in this course believe"), culture is based on what the individual personally believes or assumes ("I believe").

The present research is concerned with students' perceptions of course members' beliefs and behaviors, therefore only the term climate will be used.

Perceptions of the classroom climate are shaped by three sources: school/institutional, classroom, and student level (Wheldall, Beaman, & Mok, 1999). School/institutional characteristics such as formal and informal curricula, school size, school type (private vs. public), values and beliefs fostered by school personnel are believed to influence perceptions of the classroom because the classroom climate is situated within that school climate. In the classroom, the teacher is a significant source of influence on climate perceptions. Teacher beliefs, level of experience, perceptions of students' level of motivation and expectations, and instructional practices will shape perceptions of that classroom climate. Last, a significant source of influence on climate perceptions are shaped by other students in the class. Students' previous learning experiences, personalities, and backgrounds are presumed to affect their perceptions of the climate.

Perceptions of a classroom climate are subjective (Frenzel et al., 2007). Classroom participant's subjective interpretations of classroom happenings allows for capturing data that an external observer could miss or find to be unimportant (Fraser, 1989, 1998; Wolters & Gonzalez, 2008). More importantly, students' perceptions of events serve to guide their behaviors, so subjective data will be preferable over objective data (Fraser, 1989, 1998). Exposure to similar instructional practices in a learning environment may lead to different interpretations of that context (Urdan & Schoenfelder, 2006; Wolters, 2004). Even within in the same course, students may perceive the course

differently (Urdu, 2004). Motivation and classroom climate research both have stressed the importance of assessing students' subjective perceptions of the learning context.

An assumption made by climate researchers is that instructors do not have control over students' pre-existing individual differences in ability and family characteristics; however they do have control over their instructional practices and exert a significant influence on the course climate (Gettner, Schienebeck, Seigel, & Vollmer, 2011). Anderman and Maehr (1994) claim that a focus on student individual differences would not meet the demands placed on educators who must fit the learning context to the student group. Rather, determining how teachers can facilitate and create optimal educational contexts should be a major research focus.

Classroom climate research has focused on developing instruments to assess subjective perceptions of the classroom environment (Fraser, 1989, 1998). Instruments developed by classroom climate researchers possess many factors meant to reflect several dimensions of the classroom context. Several classroom climate instruments contain subscales to address Moos' conceptualization of the social climate (Moos, 1979; Winston et al., 1994). The three dimensions are: (1) relationship, (2) personal development, and (3) system maintenance and system change. The relationship dimension reflects the quality of relationships in the learning environment. Personal development dimension focuses on the perceptions of personal growth and self-enhancement. Finally, system maintenance and system change reflect the extent to which the environment is perceived as orderly, expectations are clear, control is maintained and responsive to change (Fisher & Fraser, 1983; Moos, 1979; Moos & Moos, 1978). These three general categories of

dimensions must be assessed to provide an accurate and reasonably complete assessment of a social environment (Fraser & Walberg, 1981).

Classroom climate researchers have developed assessment instruments for use for a diverse set of needs (Fraser, 1998; Gettinger et al., 2011). The work within this research tradition is plagued with two limitations: (1) limited attention to theoretical processes in developing scales and (2) limited consistency between instruments and scale labels (Patrick et al., 2011). These limitations within classroom climate research make it difficult to infer why certain relations have been found and comparing findings across a wide array of measures is made more difficult because of the diversity of terms used. Additionally, younger students' perceptions of the climate (elementary and secondary) schools have generally been the focus of this research tradition. There is considerably less research available for college course level climates, indicating a need for further research (Fraser & Treagust, 1986).

Classroom climate research has emphasized the importance of using assessment of the classroom to guide instructional interventions. Similar to motivation researchers, climate researchers have found relations between subjective perceptions of the climate to a variety of achievement related outcomes. Generally, cognitive, affective, and behavioral outcomes have been a focus of climate research (Haertel, Walberg, & Haertel, 1981). Adaptive cognitive outcomes include academic performance (Johnson, 2006; Walberg & Anderson, 1972), grades (Moos & Moos, 1978), and learning strategy use (Nijhuis, Segers, & Gijssels, 2008). Adaptive affective outcomes include: perceptions of support (Johnson & Johnson, 1983), forming friendships in the classroom (Johnson & Johnson, 1983; Anderson, Hamilton, & Hattie, 2004), enjoyment (Frenzel et al., 2007;



Marsh, Martin, & Cheng, 2008), and educational satisfaction (Fraser & Treagust, 1986, Pascarella, Seifert, & Whitt, 2008). Additionally, perceptions of the climate have been related to unpleasant emotions such as anxiety, anger, and boredom (Frenzel et al., 2007; Schuh, 1996). Empirical links have also been found between perceived climate and student behaviors such as task completion and participation (Anderson et al., 2004), attendance (Moos & Moos, 1978), and student conduct (Brackett, Reyes, Rivers, Elbertson, & Salovey, 2011). There is a scarcity of classroom climate research investigating how perceptions of the learning environment are related to students' motivation. One exception is the research completed by Dorman who has examined academic efficacy relation to a variety of classroom climate dimensions using secondary samples (Dorman, 2001; Dorman & Adams, 2004; Dorman & Fraser, 2009). Dorman's findings consistently support the contention that students' perceptions of the climate are related to students' efficacy beliefs.

The learning environment is viewed as a factor that can be manipulated by the instructor in an effort to increase students' academic functioning (Winston et al., 1994). It is believed that teachers can improve the learning environment through reflection and intervention resulting from assessment of the course climate (Waxman, 1991). Using an assessment of classroom climate to indentify and modify aspects of the course to improve student outcome is one method to increase the performance of both, instructor and student. Therefore, an integration of classroom climate research with motivational research may be beneficial. In particular, a better understanding of how college students' perceptions of the learning context are related to wider array of motivational outcomes is needed.

### **Motivationally Relevant Aspects of a Course's Climate**

Motivationally relevant aspects of a course's climate is defined in the present research as aspects of the climate that are believed to impact student motivation for that course. Aspects of the climate not assumed to impact motivation such as physical characteristics of the course, are not included. The present research explores students' perceptions of the learning context and its relation to students' motivation for that course, which may ultimately affect students' academic behavior and performance. It is hypothesized that a complete model would include perceptions of a course's climate that indirectly link to students' academic behaviors via their personal motivational beliefs. The present research focuses only on perceptions of motivationally relevant aspects of a course's climate in relation to their own personal motivational beliefs and self-reported course grade for that course.

This research study will focus on the classroom level, as it is more amenable to interventions by the instructor. Classroom climate researchers refer to the learning environment from elementary to the university as the classroom climate. However, the needs of students may be different depending on the different developmental stages, contexts, and domains (Katz, Kaplan, & Gueta, 2010). Declines in students' positive perceptions of the school climate have highlighted the importance of the educational environment especially during the transitions from one learning context to the next (Espinoza & Juvonen, 2011). Learning environments are fundamentally different at the elementary, secondary, and post-secondary levels. At college, students physically spend less time in the classroom. Students may be expected to complete most of the course

assignments and tasks independently. Therefore, I will use the term “course climate” instead of classroom climate when referring to the learning environment.

The purpose of the following section is to provide a conceptual explanation of the eight hypothesized course climate aspects, review assessment of each construct, and summarize prior empirical findings that relate aspects of the course climate to student motivation. These eight aspects of the course were identified for use in the present research based upon theoretical and empirical considerations that have identified these specific aspects of the climate as being related to motivation or other important student achievement related outcomes. See Table 1 for each aspect assessed and its definition in this research. The eight aspects of the college course climate hypothesized to be associated with motivation are: (1) instructor organization, (2) instructor support, (3) course situational interest, (4) student relatedness, (5) academic press, (6) autonomy support, (7) equity, and (8) performance goal structure.

These aspects of a climate were identified as aspects of the learning context related to students’ beliefs and/or behaviors that may impact motivation. Motivation, classroom climate, or both research traditions have investigated these aspects of the course, although rarely within one research design. These eight aspects of a climate assumed to be related to each other.

Table 1

*Hypothesized Course Climate Aspects*

Hypothesized Course Climate Aspects	Definition
Instructor Organization	Students' perceptions that course activities and assignments are well planned and organized.
Instructor Support	Students' perceptions that the instructor supports student learning through encouragement.
Course Situational Interest	Students' perceptions that the course is interesting and enjoyable.
Student Relatedness	Students' perceptions that students form positive social relationships with one another.
Academic Press	Students' perceptions that they are provided with challenging tasks, are held to high standards, and are expected to be effortful.
Autonomy Support	Students' perceptions of the extent to which the instructor is autonomy-supportive.
Equity	Students' perceptions that all students are treated equally.
Performance Goal Structure	Students' perceptions that students are focused on demonstrating competence to others.

**Instructor organization.**

***Instructor organization defined.*** Instructor organization defined in the present research is students' perceptions that course activities and assignments are well planned and organized. Previous research has investigated conceptually similar constructs related to organization providing some indication that this is an important dimension of the learning environment that can and should be assessed. Perceptions of teacher

organization have been viewed as “structure” and defined as the degree to which teachers clearly state their expectations, are consistent and predictable, provide help and support, and adjust teaching strategies as necessary (Skinner & Belmont, 1993). Others have investigated perceptions of order and organization (Anderson et al., 2004), task organization (Feldlaufer, Midgley, & Eccles, 1988), and task orientation (Dorman, 2001; Dorman & Adams, 2004; Dorman & Fraser, 2009). Order and organization has been defined as a classroom environment in which there is emphasis on students behaving in an orderly and polite manner and overall organization of classroom assignment and activities. Task organization has been characterized as the extent to which students use the same classroom materials, are provided alternative methods for completing assignments, have the ability to work on assignments for several days before checking in with the instructor, and are able to work on different activities during the same time in class. Another conceptually related construct to organization is called task orientation. Task orientation has been defined as the extent to which it is important to complete activities planned and to stay on the subject matter (Dorman, 2001; Dorman & Adams, 2004; Dorman & Fraser, 2009).

***Assessment of instructor organization.*** Researchers have used differing conceptualization of organization; some researchers have focused on how specific tasks are organized and presented (Dorman, 2001, Dorman & Adams, 2004, Dorman & Fraser, 2009; Feldlaufer et al., 1988) while others have examined the organization more broadly by asking participants to rate the overall level of organization for course activities (Anderson et al., 2004; Pascarella et al., 2008). Classroom climate research has demonstrated the importance of assessing instructor organization. While the assessment

of organization may vary, from specific or broad, it is an important aspect of the climate to measure.

***Empirical findings for instructor organization.*** While the level of analysis (specific vs. broad) has varied, most research in this area employed self-report methods to collect data. Most motivational research has underemphasized this dimension of the learning environment. In an investigation of task orientation, Dorman and Fraser (2009) found that secondary students' climate perceptions regarding the degree to which students completed activities as planned and stayed on task were positively related to their academic efficacy, interest, and enjoyment of subject matter. Using a broad assessment of course organization, defined and assessed similarly in this study, Pascarella et al. (2008) employing a longitudinal research design using a sample of over one thousand first year college students, examined how students' perceptions of organized and clear instruction, educational satisfaction, persistence into the second year of college, and other variables were related. Results indicated that educational satisfaction was a mediator between organized instruction and enrolling for the second year at the same institution. College students who perceived that instruction was clear and organized were more satisfied with their undergraduate education. Satisfied students were more likely to enroll for the second year at that institution. Research using specific (task organization) and broad (course overall) assessment of organization has found positive associations with motivation. Further research is needed to determine if students' perceptions of an organized instructor is related to a wide array of motivational beliefs and self-reported course grade.

### **Instructor support.**

***Instructor support defined.*** Instructor support defined in the present research is students' perceptions that the instructor supports student learning through encouragement. This line of inquiry has been extensively examined particularly at the elementary and secondary level. Student's perception of teacher support is that the teacher cares and will provide them assistance (Patrick et al., 2007). Teacher support, especially at the lower grades, has been referred to "pedagogical caring" (Wentzel, 1997) and "teacher involvement" (Skinner & Belmont, 1993). A closely related construct is autonomy support. Autonomy support is believed to be a multi-dimensional construct that focuses on supporting students' inner desire to meet learning goals (Reeve, 2006). Autonomy support will be discussed later at greater length. However, two instructional behaviors that have been associated with autonomy-supportive teaching practices are praise as informational feedback and offering encouragement (Reeve, 2006). These components of autonomy support will be discussed here because of the emphasis on teacher's affective response/support to students. Teacher behaviors that support students' self-direction include providing encouragement and using praise to help students realize goals for learning and serve to support them emotionally.

***Assessment of instructor support.*** Assessment of teacher support has included items that consist of positive affection (enjoyment of students), attunement (understanding, sympathy, and knowledge about the learners), dedication of resources (assistance, time, and energy to students), and dependability (availability in case of need) (Skinner & Belmont, 1993). Assessment of teacher support/involvement at the elementary level has been investigated using self-report measures, teacher reports, and

classroom observational studies (Patrick et al., 2007; Skinner & Belmont, 1993). Assessment at the secondary and post-secondary levels has relied on self-report measures. Researchers have used different definitions and instruments to assess instructor support, for example most research has not distinguished between academic and emotional support. The present research fills a gap in the previous research by assessing perceptions of emotional/affective instructor support at the college level and linking motivational beliefs for that course.

***Empirical findings for instructor support.*** Teacher support has been investigated differentiating between providing students with academic support and with emotional support generally with younger samples (Patrick et al., 2007). Using a fifth grade sample, researchers assessed perceptions of the social climate and found that teacher emotional and academic supports were highly correlated. Teacher emotional support and student engagement (self-regulation strategies and task-related interaction) was mediated by academic efficacy and students' adoption of mastery goals. Although this research was completed on a younger group of students, it does provide some evidence that the perception of teacher providing support, specifically emotional/affective support to students may serve to enhance the students' motivational beliefs. Prior research using elementary samples have found similar positive relations between teacher support and adaptive outcomes such as self-efficacy (Fast et al., 2010), expectancies for success (Goodenow, 1992; Midgley, Feldlaufer, & Eccles, 1989; Trickett & Moos, 1973) and student self-report of academic effort (Wentzel, 1997).

Using a high school sample, Hardré and Sullivan (2008) found that the more students perceived that the teacher was supportive, the more they valued learning in the



course, held greater success expectancies, and perceived ability in the course. While the number of classroom climate dimensions assessed was limited and value was assessed more broadly (i.e., “I value class-related activity and work”), this does provide some initial support for the importance of assessing perceptions of instructor support. Additionally, this study does suggest an important relation between perceptions of instructor support and students’ motivational beliefs, specifically ability and value beliefs.

At the college level, Freeman et al. (2007) using a first semester college sample found students’ perceptions of instructor encouraging participation, instructor enthusiasm, friendliness, helpfulness, and that the instructor was organized and prepared for class significantly predicted students’ sense of belonging for the course. These results provide some indication that instructor support and organization may be related and both course climate dimensions may both be positively related to adaptive motivational beliefs for the course. This research will make an important contribution by exploring how perceptions of instructor support are related to positive motivational beliefs (self-efficacy, attainment value, utility value, and personal interest), negatively beliefs (anxiety), and the achievement goals adopted in that course (mastery approach, performance approach, and performance avoidance).

#### **Course situational interest.**

***Course situational interest defined.*** Course situational interest, a term developed for the present research, is the extent to which course participants believe their course sessions are interesting and enjoyable. This definition takes into consideration the cognitive component of interest, which is focused attention. Second, this definition takes

into consideration the affective component, by emphasizing the degree to which the course is enjoyable. Conceptualization of the course situational interest is similar to situational interest in prior motivation research because of the emphasis on the context. One important distinction made in the present research is that for course situational interest, participants are not asked to reflect upon their personal interest (how they rate their own interest), rather they are asked to reflect upon the interest of other students during course sessions. A scale was developed to assess the level of interest held by most students in the course, as perceived by research participants. In line with Hidi and Renninger's (2006) four-phase model of interest development, it is hypothesized that situational interest is externally supported by the context and may serve to support and/or develop personal interest. College students who find the course to be interesting and enjoyable are presumed to pay attention during course sessions. The situational interest triggered in the course may develop into individual personal interest in that academic domain.

*Assessment of course situational interest.* Assessment of interest at the college level has exclusively relied on self-report measures. Often researchers examining interest at the college level have developed their own scale to assess interest. There is a need to clarify the definition and assessment of situational interest, especially by differentiating it from personal interest. Rather than examining "interest", classroom climate researchers have explored students' perceptions of satisfaction. Interest and satisfaction seem to be conceptually similar. For example, one item from the College and University Environment Inventory's satisfaction scale is "Classes are boring." (Schuh, 1996).

***Empirical findings for course situational interest.*** Harackiewicz, Barron, Tauer, and Elliot (2002) found that college students who reported interest in the course subject matter was positively related to enjoyment of the class, final grade in the course, semester GPA, subsequent course enrollment in that content area, and selecting that content area as their major. It is worthwhile to note that students of one instructor significantly enjoyed course lectures more than students of the other instructor. This research supports the notion that course enjoyment, which is believed to play a significant role in interest, can be shaped by the course instructor. Triggering students' situational interest in the course climate may serve to promote personal interest and learning in the course. While teachers do not have control over their student's pre-existing personal interests, they can influence the development of interest by creating a climate that fosters students' situational interest (Ainley et al., 2002; Hidi & Harackiewicz, 2000). This research will make a valuable contribution by clearly distinguishing the assessment of course situational interest and personal interest.

#### **Student relatedness.**

***Student relatedness defined.*** The need to feel a connection with others has been theorized by several researchers (Ryan & Deci, 2000; Tinto, 1975; Maslow, 1948). Students' perceptions that course members form positive social relationships with one another is defined as student relatedness in this study. At all levels of education, students who can interact and form positive relations with others are believed to display adaptive social functioning.

***Assessment of student relatedness.*** Student relatedness has most typically been assessed using self-report measures (Freeman et al., 2007; Fraser, 1998, Furrer &

Skinner, 2003; Pittman & Richmond, 2007). Classroom climate instruments have scales that tap students' perception of relatedness using scales entitled "student cohesiveness", "cohesiveness", and "affiliation". While some motivation researchers have operationally defined and assessed "relatedness" others have used "belongingness". The variability in terms, definitions, and assessment of this construct makes it difficult to compare research findings.

***Empirical findings for student relatedness.*** The need for belonging has been examined with college students as a construct of interest for university persistence researchers. It is believed that academic and social integration along with individual characteristics, such as student expectations and motivational attributes, may influence the decision to persist in college or not (Tinto, 1975). Tinto (2006) proposed that one area of potential benefit is researching classroom practices that impact student learning as a valuable source for understanding student dropout. Indeed, sense of belonging at the university significantly predicted first year student's institutional commitment and intentions to persist at the university (Hausmann, Schofield, & Woods, 2007). Pittman and Richmond (2007) found that second semester college freshman that felt a higher sense of university belonging reported earning better grades and perceived higher levels of scholastic competence.

In terms of sense of relatedness at the college level, Freeman et al. (2007) found that students' self-reported perception of belongingness was positively related with self-efficacy, intrinsic motivation, and perceptions of value of academic tasks in the class. The present study will expand upon prior research by exploring how student relatedness

is related to other aspects of a course's climate and to a greater array of motivational beliefs and self-reported grade in that course.

**Academic press.**

*Academic press defined.* Academic press is the degree to which students' perceive that they are provided with challenging tasks, are held to higher standards, and are expected to be effortful. A strong academic press in the course perceived by students indicates to them that a demand is placed on them for enhanced cognitive engagement (Middleton & Midgley, 2002). Academic press is believed to encompass more than just higher teacher expectations, but also the use of instructional techniques that ensure students' understanding of the material. Students' perception that they are to meet challenging expectations has been found to be adaptive for motivational beliefs, self-regulation, and help seeking (Turner & Meyer, 2004). Additionally, Linnenbrink & Pintrich (2003) wrote about the importance of teachers providing students with challenging academic tasks that can be reached with effort. The rationale for this implication for classroom practice was that students' efficacy beliefs develop through success on challenging tasks.

Academic press or the perception that the instructor presses them to meet higher expectations to learn the course material may be related to student engagement. Academic press bears some similarity to possessing higher expectations, but is differentiated because it is the instructor who insists on students to meet rigorous academic expectations. A learning environment that fosters a rigorous academic press by challenging students to meet higher expectations may emphasize to students that they are capable of meeting a higher standard of achievement and that the course material is

valuable, thus worthy of a great amount of effort. A level of academic press that is unrealistically high or very low may result in less than optimal student motivational engagement. Turner and Meyer (2004) claim that providing students with challenging instruction and positive support is necessary to promote student motivation. Instructional practices that would support student motivation and challenge include: (1) teaching for understanding and having students be accountable by demonstrating understanding and (2) providing an emotionally supportive environment to encourage learning requiring a greater degree of challenge. It is hypothesized that teachers who promote a high challenge and academic press for understanding, relay messages to their students that content is valuable and are confident that students can succeed.

*Assessment of academic press.* The assessment of academic press has relied exclusively on self-report measures using elementary and secondary students. The Patterns of Adaptive Learning Scales (PALS) has an academic press scale for use with elementary and secondary students (Midgley et al., 2000). There is a need to develop a measure for use with college students.

*Empirical findings for academic press.* Using an eighth grade sample, Middleton and Midgley (2002) found that students' perceptions of academic press for understanding was positively related with self-efficacy beliefs. The only research examining college students' perceptions of academic press found that aspect of the course climate positively predicted students' self-reported effort, persistence on course tasks, and intention to persist at the university (Arroyo-Giner, Wolters, Fan, & Yu, 2010). Because perceptions of academic press were related to behavioral components of motivation, it seems plausible that it may be related to motivational beliefs as well. An

important contribution the present research makes examining the degree to which students' perceptions of academic press in a course is related to their motivational beliefs and performance in that course.

**Autonomy support.**

*Autonomy support defined.* Teachers who are autonomy-supportive facilitate intrinsic motivation for learning because they support students' internal motives to learn (Jang, Reeve, & Deci, 2010; Katz & Assor, 2007; Reeve, 2006). Autonomy-supportive teachers nurture students' needs, interests, and preferences by creating classroom contexts that bolsters internal desire to learn (Reeve, 2006; Reeve, Jang, Carrell, Jeon, & Barch, 2004). Specific teacher practices that are autonomy-supportive include: (1) adopting students' perspectives, (2) welcoming students' thoughts, feelings, and behaviors, and (3) supporting motivational development and autonomous self-regulation (Reeve, 2009). Teachers who take other's perspective, acknowledge other's feelings and thoughts, provide others with information, allow others to make decisions, and minimize the use of control and pressure are autonomy supportive (Williams & Deci, 1996). By limiting control and pressure from instructors, it is believed that students' motivation becomes internally focused, rather than externally focused.

Teachers nurture students' inner motivational resources by limiting the use of external pressures such as relying on incentives and consequences. Autonomy-supportive instructors do not pressure or control students; rather they make an effort to provide students with explanatory rationales and provide students with competence-related information. Allowing students opportunities for making choices is considered an autonomy-supportive practice (Katz & Assor, 2007). In regards to teaching practices,

autonomy support has become synonymous with choice (Stefanou, Perencevich, DiCinto, & Turner, 2004). Katz and Assor (2007) claim that making choices does not increase intrinsic motivation; rather it is the opportunity to make choices that lead to the realization of personal goals that is motivating. Students benefit when their teacher is autonomy-supportive and suffer in a controlling learning environment. A teacher controlling style undermines student motivation because a focus on an external perceived locus of control, sense of external pressure, and need to act to meet obligation to others (Reeve, 2009). A teacher controlling style often is associated with a control over student behavior, therefore not taking into consideration cognitive, motivational, and emotional factors.

Supporting students' autonomy such that they perceive their behaviors as self-determined is believed to facilitate a wide variety of adaptive outcomes (Ciani, Middleton, Summers, & Sheldon, 2010; Reeve, 2006) such as intrinsic motivation to learn, perceived competence, mastery motivation, deeper level of information processing, greater engagement, positive affect, and better academic performance. Because perceived autonomy support has been related to a variety of student outcomes, it is preferable to use students' perceptions of autonomy support as the highest priority of entry in the hierarchical regressions.

***Assessment of autonomy support.*** Assessment of autonomy support has used both classroom observation and self-report measures. Classroom observations have been employed in research using younger samples. The most commonly used instrument to assess autonomy support is the autonomy support scale from the Learning Climate Questionnaire developed by Williams and Deci (1996).



***Empirical findings for autonomy support.*** Research has found a positive relation between autonomy-supportive practices and intrinsic motivation to learn (Garcia & Pintrich, 1996; Shih, 2008). Garcia and Pintrich (1996) examined whether college students' perceived autonomy support was related to intrinsic goal orientation, task value, self-efficacy, test anxiety, and final course grade. Autonomy was defined as the degree to which students reported being afforded the opportunity to participate in decision-making in the course, which is a narrower definition than proposed by Reeve (2009). Perceived classroom autonomy positively predicted intrinsic goal orientation, task value, and self-efficacy and was not related to test anxiety nor course grade.

Exploring autonomy-supportive practices with a younger sample, Shih (2008) examined Taiwanese junior high school students' perceptions of autonomy support, behavioral engagement, and emotional engagement. Shih (2008) found that students' perceptions of autonomy support positively predicted student intrinsic motivation, involvement ("I listen carefully in class."), participation ("I participate in class discussions."), curiosity ("When I'm doing my work in class, I feel interested."), and enjoyment ("When I'm in school, I feel happy.") and negatively predicted ignoring ("When I'm in class, I usually think about other things."). Autonomy support negatively predicted maladaptive emotion engagement outcomes such as anxiety ("When my teacher first explains new material, I feel scared.") and boredom ("When I'm doing my work in class, I feel sleepy."). In line with previous research, it is expected that increased perceptions of autonomy support would be negatively related to anxiety in the course and positively related to adaptive motivational beliefs.

### **Equity.**

***Equity defined.*** Learning contexts where students' believe that all members of the course are treated equally is believed to facilitate motivation. Graham and Hudley (2005) claim that discrimination has important implications for motivation and competence because people who perceive that they are being mistreated often lose their ability to be self-efficacious. "An environment of mutual respect involves a perception that the teacher expects all students to value one another and their contributions, requires students to be considerate of others' feelings, and prohibits students making fun of each other" (Patrick et al., 2007). One manner of promoting mutual respect in the classroom is to treat all students in an equitable manner. The promotion of mutual respect is believed to facilitate adolescents' adaptive social, emotional, and cognitive functioning in the classroom (Patrick & Ryan, 2005). Perceptions that all members of the course are treated fairly and valued will likely facilitate students' feelings of psychological safety (Patrick & Ryan, 2005). Ryan and Patrick (2001) controlled for eighth graders' prior motivation, engagement, gender, race, and prior performance found that the students' perception that teacher promoted mutual respect positively predicted academic efficacy and self-regulated learning. They hypothesized that a learning environment where students' ideas and beliefs are valued facilitates students' confidence in their ability to learn; additionally, the less anxiety they experience aides more cognitive resources devoted to engaging in the task at hand.

***Assessment of equity.*** Classroom climate researchers using self-report measures have assessed equity. The Learning Environment Inventory (Fraser, Anderson, & Walberg, 1982) has a scale called "favoritism" which is conceptually similar to "equity"

in the What is Happening In This Classroom? Questionnaire (Dorman & Adams, 2004). Both instruments are for use with younger samples. There is a need to develop a scale to assess equity at the college level.

***Empirical findings for equity.*** A course climate that emphasizes equal treatment for all students is likely to facilitate motivation for the course because everyone is equally valued as a student of the course. Johnson (2006) examined college students' perception of climate in a hybrid college course and their academic achievement. Fairness of grading dimension was a positive predictor of academic achievement. College students who felt that they were evaluated fairly outperformed students who thought they were unequally assessed. In an unpublished study, Arroyo-Giner et al. (2010) found that college students' perceptions of equity positively predicted students self-reported level of effort and persistence on course tasks, and intention to persist at the university. Using a secondary school sample, Dorman and Adams (2004) examined the relation between the classroom environment and academic efficacy. Out of the ten classroom scales, students' perception of equity was found to be the strongest positive predictor of academic efficacy. These finding provide some indication the perception of equitable treatment of students can and should be assessed. The present study will make a valuable contribution by exploring how equity is associated with motivational beliefs for the course using a college sample.

#### **Performance goal structure.**

***Performance goal structure defined.*** Motivation research conducted within the achievement goal theory has explored how students' perceptions of the goals structures are related to the academic goals pursued within the context (Bong, 2008). Goal

structures that have been examined are performance goal structure and mastery goal structure (Urdan & Schoenfelder, 2006; Wolters, 2004). Students' perceptions of a performance goal structure are characterized as classrooms that stress the importance of ability and social comparisons. Students may perceive that the classroom or school environment encourages and rewards students that are successful in competitive activities. Students may also perceive that getting good grades and doing well on standardized tests in comparison to others is emphasized and rewarded. Perceived performance goal structure have been associated with maladaptive academic outcomes such as: procrastination (Wolters, 2004) and self-handicapping strategies (Urdan, 2004). Positive academic outcomes such as greater self-efficacy, increased effort and persistence, and less procrastination have been found when students perceive a mastery goal structure emphasizing the importance of learning, effort, and self-improvement (Wolters, 2004).

*Assessment of performance goal structure.* Students' perceptions of a performance goal structure are characterized as classrooms that stress the importance of ability and social comparisons. Students may perceive that the classroom or school environment encourages and rewards students that are successful in competitive activities. Performance goal structure has been assessed using the Patterns of Adaptive Learning Survey (Midgley et al., 2000) at a variety of educational levels. The Achievement Goal Questionnaire (Elliot & McGregor, 2001), which was later revised by Murayama and Elliot (2009), has items to assess students' personal achievement goals. Researchers have used personal achievement goal items and modified the question stem to state "in this class" to assess the goal structure.

***Empirical findings for performance goal structure.*** Using a college sample, Karabenick (2004) examined how students' perceptions of the goal structure (mastery approach, performance approach, and performance avoidance) was related to their help seeking behaviors and found that perceptions of a mastery approach goal structure was positively related to seek help. Students who perceived that the course focusing on performance goals were significantly likely to avoid seeking help. The present study makes a valuable contribution by exploring the degree to which performance goal structure is related to other aspects of the course climate. This study examines how a climate focused on demonstrating competence to others is related to motivational beliefs.

### **Research Questions**

The present research explores how college students' perceptions of various aspects of a course's climate (instructor organization, instructor support, course situational interest, student relatedness, academic press, autonomy support, equity, and performance goal structure) are related to their motivational beliefs and performance for that course. The present study would advance the understanding of college student motivation by (1) providing a model of a college course climate containing key constructs from different research traditions and (2) providing some evidence for patterns of motivational beliefs in relation to students' perceptions of various course climate dimensions. Specific research questions are as follows:

1. Do the eight hypothesized motivationally relevant aspects of a course climate form distinct and salient dimensions of a college course climate?
  1. Instructor organization
  2. Instructor support

3. Course situational interest
  4. Student relatedness
  5. Academic press
  6. Autonomy support
  7. Equity
  8. Performance goal structure
2. To what extent can students' perceptions of the course climate predict their self-efficacy, attainment value, utility value, personal interest, anxiety, mastery approach goal adoption, performance approach goal adoption, performance avoidance goal adoption, and self-reported course grade?

## Chapter III

### Method

#### Participants

A sample of 305 college students from a large urban ethnically diverse university participated in this research study. The sample was comprised of more females ( $n = 252$ , 83%) than males ( $n = 53$ , 17%), with a mean age of 22 years ( $SD = 5.01$ ). Participants' self-reported race/ethnicity was Hispanic/Latino(a) ( $n = 85$ , 28%), Caucasian/White ( $n = 72$ , 24%), Asian/Asian-American ( $n = 66$ , 22%), African-American /Black ( $n = 52$ , 17%), Other ( $n = 27$ , 9%), and Native American ( $n = 1$ , <1%). Participants self-reported their academic status as Juniors ( $n = 127$ , 42%), Seniors ( $n = 71$ , 23%), Sophomores ( $n = 83$ , 27%), Freshman ( $n = 18$ , 6%) or Post-Baccalaureate ( $n = 5$ , 2%).

The eligibility criteria for research participation was: (1) 18 years or older, (2) provided informed consent, and (3) enrolled in an eligible psychology course with a face-to-face lecture format held on the main campus. Students enrolled in the online sections of these courses or students enrolled in sections held at a satellite campus were not invited to participate. Eligible psychology courses included: Child Development (2350), Psychology of Adolescence (2351), Introduction to Psychological Statistics (3301), Industrial-Organizational Psychology (3310), Psychology of Personality (3325), or Abnormal Psychology (4321). These courses were selected for recruitment because students may participate in research opportunities facilitated via the university's online research management system to receive course and/or extra credit. In terms of the section enrollment size within these target courses, sections ranged of an enrollment of 39 to 61 students. Two participants did not make a target course selection and six did not

indicate section enrollment, therefore are not included in frequencies of target course/section enrollment size presented in Table 2.

## **Materials**

**Course information.** Participants selected a target course for which they would reflect upon when providing their attitudes, beliefs, and behaviors for the remainder of the survey. Participants selected a target course from a menu of six courses predetermined by the researcher, and then selected the particular section for which they were enrolled. Asking participants to provide information about their target course/section was used to ensure that participants would be providing beliefs regarding course sessions that were similar in size and format. Section enrollment size made publically available from the schedule of courses was collected for all sections of the target courses at the beginning of the spring semester. Table 2 provides the frequencies and percentage of sample participants enrolled in each target course. Also provided is the total number of students enrolled within each section, at the beginning of the semester.



Table 2

*Target Course Enrollment of Sample and Section Size*

Sample's Enrollment			Section Size	
Target Course	<i>n</i>	Percent of Sample	<i>M</i>	<i>SD</i>
Child Development	37	12.2	47.00	3.46
Section 1	13		45	
Section 2	6		45	
Section 3	18		51	
Psychology of Adolescence	42	13.9	46.75	2.87
Section 4	14		45	
Section 5	10		46	
Section 6	13		45	
Section 7	5		51	
Introduction to Psych. Statistics	103	34.0	50.33	5.94
Section 8	17		47	
Section 9	7		45	
Section 10	5		43	
Section 11	6		54	
Section 12	6		51	
Section 13	9		61	
Section 14	10		45	
Section 15	23		56	
Section 16	19		51	
Industrial-Organizational Psychology	25	8.3	42.75	6.18
Section 17	3		40	
Section 18	9		40	
Section 19	9		39	
Section 20	2		52	
Psychology of Personality	49	16.2	55.67	2.31
Section 21	10		53	
Section 22	17		57	
Section 23	21		57	
Abnormal Psychology	47	15.5	43.50	2.38
Section 24	10		44	
Section 25	11		45	
Section 26	10		45	
Section 27	16		40	

*Note.* *N* = 305

**Course climate.** Motivationally relevant aspects of the course climate were assessed using 40 items. Of these items, 19 were researcher created and 21 were modified or taken from existing instruments. Items were identified for use that seemed most relevant to college learning experiences that may be influential to students' motivation. Therefore, complete scales from existing instruments were generally not used, the only exception was the use of the full short form of the autonomy support subscale from the LCQ (Williams & Deci, 1996). The exact text and source of all items are presented in Appendix B. The course climate items were designed to assess eight aspects of the course climate including: instructor organization, instructor support, course situational interest, student relatedness, academic press, autonomy support, equity, and performance goal structure.

***Instructor organization.*** Five items were used to assess students' perceptions that the instructor was well prepared by organizing course activities and assignments. Three of the five items were modified from existing course climate instruments. One item was modified from the Classroom Environment Scale (CES) (Fisher & Fraser, 1983; Fraser, 1998; Moos & Trickett, 1974), another was modified from the Learning Environment Inventory (LEI) (Fraser et al., 1982), and one was modified from the College and University Classroom Environment Inventory (CUCEI) (Fraser & Treagust, 1986). Two items were researcher created. The need to assess this dimension of a college course stemmed primarily from course climate research.

***Instructor support.*** Four items were used to assess students' perceptions that the instructor supports learning through encouragement. Of the four items, two items were researcher created and two were modified from previous research. One item was

modified from the CES and one was modified from Hadré & Sullivan (2008). The need to assess this dimension of a college course stemmed from motivational and course climate research.

***Course situational interest.*** The extent to which participants believe that other members in the course find course sessions to be interesting and enjoyable was assessed using five items. Three items were researcher created and two were modified from the College and University Lecture Environment Inventory (CULCEI) (Schuh, 1996). Items were intended to assess interest as it relates to experiences within the course (situational), rather than assessing students' beliefs about the course material as being personally interesting. The need to assess this dimension of a college course stemmed primarily from motivational research.

***Student relatedness.*** Students' perception that students in the course form positive social relationships with one another was assessed using four items. Two items were researcher created and two were modified from the CULCEI. The need to assess this dimension of a college course stemmed primarily from course climate research.

***Academic press.*** Students' perceptions that students in the course are provided with challenging tasks, are held to high standards, and are expected to be effortful was assessed using seven items. Four items were researcher created. The remaining three items were modified from Middleton and Midgley's (2002) scale of academic press. The need to assess this dimension of a college course stemmed primarily from motivation research.

***Autonomy support.*** The Autonomy Support scale from the Learning Climate Questionnaire (Williams & Deci, 1996) was utilized in this research study because it has

been used in prior research (Filak & Sheldon, 2008; Summers, Bergin, & Cole, 2008; Shih, 2008). The short form rather than the full questionnaire was used in the current study. Filak and Sheldon (2008) reported good reliability ( $\alpha = .92$ ) using this six-item scale with a college sample. This scale assessed students' perceptions of the extent to which the instructor is autonomy-supportive. The distinction between this scale and the instructor support scale is that the autonomy support scale emphasizes specific actions the instructor takes to provide students with greater decision making in an effort to support students' intrinsic motivation to complete course activities. Only five of the six items were used in the present research. One item was dropped because it does not emphasize how the instructor uses student input for making course decisions. The dropped item was "Students feel understood by the instructor." Reliability of the modified short form (five items) was good ( $\alpha = .80$ ). The need to assess this dimension of a college course stemmed primarily from motivation research.

***Equity.*** Four researcher created items were used to evaluate the extent to which research participants believe that members of the course are treated equally. The need to assess this dimension of a college course stemmed primarily from some climate research.

***Performance goal structure.*** Six items meant to reflect the course's performance goal structure or the extent to which students in the course are focused on demonstrating competence to others. These items came from three different sources. Two of the six items were researcher created. Three were modified from the Achievement Goal Questionnaire-Revised (AGQ-R) (Elliot & Murayama, 2008) to represent students' perceptions of the performance goal structure rather than personal achievement goals. One item was taken from the LEI. Motivation research and climate research have both

examined the degree to which students are concerned with competence or competition in the course.

**Personal motivational beliefs.** Twenty-eight survey items were used to assess seven personal motivational beliefs including: self-efficacy, attainment value, utility value, personal interest, mastery approach goal adoption, performance approach goal adoption, and performance avoidance goal adoption. Additionally, anxiety for the target course was assessed. All the items are listed in Appendix C. Most of the items used to assess motivational beliefs were taken directly from previous research or modified for use in this research.

**Self-efficacy.** Students' self-efficacy, specifically their perceptions of feeling capable and confident in their ability to understand course material was assessed. The Self-efficacy for Learning and Performance Scale from the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, & McKeachie, 1993) was used. The MSLQ is a self-report instrument for use with college samples developed to assess various aspects of students' motivational beliefs and learning strategy usage. While this scale was originally created with eight items, only the five items tapping into students' confidence judgments in learning course content was used. The following three items were not used because of the lack of emphasis on learning course material: "I believe I will receive an excellent grade in this class.", "I expect to do well in this class.", and "Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.". Theoretically, the expectation to do well and receive a good grade is distinct from the judgment in one's ability to learn course material thoroughly (Elliot & Murayama, 2008). Reliability for these five items was excellent ( $\alpha = .90$ ).

***Attainment value.*** Student's attainment value was assessed using three items meant to tap into students' perceptions of importance of learning course material. These items were modified from an attainment value scale presented by Schunk et al. (2008). Reliability for this three-item scale was adequate ( $\alpha = .71$ ).

***Utility value.*** Utility value, or the importance of learning course material for meeting of future goals was assessed using three items. The items used in the present study originated from a previous study (Hulleman et al., 2008). Reliability for this scale was found to be adequate ( $\alpha = .72$ ) by the original authors using a college sample. For this study, the internal consistency of this scale was also found to be adequate ( $\alpha = .76$ ).

***Personal interest.*** Personal interest was assessed using three items meant to assess student's beliefs course content is personally enjoyable to learn. The focus is not on the perception that the course context is interesting, rather the emphasis in this scale is on the degree to which the participant finds course material personally interesting. The focus of these items is not on the course environment, but rather a reflection on one's own level of interest about the course's subject matter. Personal interest is assumed to be a more stable personal disposition toward a specific topic or activity (Hidi & Harackiewicz, 2000). All items were researcher created. The reliability of the three items was excellent ( $\alpha = .91$ ).

***Mastery-approach goal.*** The three-item mastery-approach goal scale was used from the AGQ-R to assess the degree to which participants' goal was focused on attaining competence (Elliot & Murayama, 2008). The reliability of the three items was found to be adequate ( $\alpha = .74$ ) using this sample of college students. The original

authors Elliot and Murayama (2008) reported a higher reliability value ( $\alpha = .84$ ) for this scale.

***Performance-approach goal.*** The performance-approach goal scale from the AGQ-R was used to measure the extent to which students were focused on gaining normative competence (Elliot & Murayama, 2008). The reliability of the three items was found to be adequate ( $\alpha = .84$ ) for this sample of college students. The original authors of this scale reported a higher reliability for this scale ( $\alpha = .92$ ) (Elliot & Murayama, 2008).

***Performance-avoidance goal.*** The performance-avoidance goal scale from the AGQ-R was used to measure the extent to which students were focused on avoiding normative incompetence (Elliot & Murayama, 2008). The reliability of the three items was found to be adequate ( $\alpha = .85$ ), however the original authors of this scale reported a higher reliability value ( $\alpha = .94$ ).

***Anxiety.*** Student's anxiety for the course was assessed using five items. The Test Anxiety scale of the MSLQ was modified to reflect worry and negative emotionality when thinking about the target course, rather than when thinking about taking an exam. Cronbach's reliability for the original five items was found to be good ( $\alpha = .80$ ) by the authors (Pintrich et al., 1993). Reliability of the modified items used in this study was found to be good ( $\alpha = .80$ ).

***Self-reported grade.*** Students were asked a single item to assess self-reported grade, "What grade do you anticipate receiving for this course?"; Response options were: A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F. The university's grading system does not include A+, so this option was not provided for participants to select. This item assesses

students' performance expectations in terms of final course grade. This self-reported grade was recoded into a numerical form with a range of 1 (F) to 12 (A).

### **Procedure**

In spring 2012 college students who met the eligibility criteria for research participation were recruited via the university's online research management system. Students who met eligibility criteria were invited to participate. The sole recruitment activity entailed providing a brief description of the study to eligible students. Once signed up for research participation students were provided with the link to the online survey.

The survey data was collected using SurveyMonkey, a commercially available online survey provider. The data collected from this site was protected for confidentiality. The online survey consisted of five sections. First, participants were asked to read the informed consent document (see Appendix A) and provide consent to participate in the study. Next, participants reported on information about themselves. Then, participants were asked to select one of the six target courses for which they would respond to the rest of the survey. After making a selection for the target course, participants were asked to select the section of the course he/she was enrolled. The skip logic feature was used so that participants were asked to select only the applicable course session based on the selected target course. After providing information about the target course/session participants self-reported the grade they anticipated receiving.

In the fourth section of the survey, participants answered 40 Likert scaled items regarding their perceptions of the target course climate. The sequence of these items was presented in a random order as designated by SurveyMonkey. Last, participants were



asked to self-report upon their motivational beliefs regarding the target course by answering 28 Likert scaled items. These items were also presented in a random sequence. All 68 Likert scaled items had a response scale of 1 (*strongly disagree*) to 5 (*strongly agree*).

Data were collected from mid to late spring semester (March 19 to April 23). Data were collected during the second half of the semester so that students would have had experiences with course sessions needed to provide perceptions regarding the course climate. Initially, there were a total of 362 cases of data, however data inspection revealed that some responses needed to be removed before conducting any analysis due to extensive missing data. One response was removed because the participant did not provide consent. In addition, 28 responses were removed because the only response made was granting consent. These respondents skipped all subsequent questions, and so were removed. Nineteen respondents answered the beginning portion of the survey, but did not answer any of the 68 likert styled items (course climate and motivational beliefs). These respondents were also removed due to extensive missing data. The data removed was considered non-random missing data because those participants purposely chose not to answer large portions of the survey. Last, a final inspection of missing data revealed that nine respondents randomly skipped 6 or more items (skipped more than 9% of likert styled items), therefore were also removed from analyses. The 57 deletions (16% of total responses) due to extensive missing data resulted in a final sample size of 305. The decision to delete these cases was made because the missing likert styled items were critical to this study. After removing the responses with extensive missing data, the final

data had ignorable missing data. The maximum percent of missing data for any likert variable was equal to or less than 1.3%.

**Exploratory factor analyses methods.** To understand the underlying factor structure of motivationally relevant aspects of a college course climate principal axis factor analysis was selected to address the first research question. EFA is an appropriate statistical technique to address the first research question because it serves to identify the number of latent constructs and the underlying factor structure for a given set of variables. Principal axis factoring was selected because this technique uses the common variance shared among the variables (Meyers, Gamst, & Guarino, 2006). Oblique rotation using the Direct Oblimin feature in SPSS 17 (Delta = 0) was used because it was expected that course climate factors would be correlated. Using the variable mean allowed for the maximum number of 305 responses per variable. The sample size of 305 is considered “good” for conducting an EFA (Meyers et al., 2006) using a general evaluation of adequate sample sizes. Using the 10:1 subject to item ratio, an ideal sample size would have been 400 (Costello & Osborne, 2005). The Kaiser-Meyer-Olkin measure of sampling adequacy was .88, indicating that the data was suitable for EFA analyses. Additionally, Bartlett’s Test of Sphericity was significant ( $p < .001$ ) indicating that the data possessed sufficient correlation between the variables for continuing on with the EFA.

In order to produce a cohesive and theoretically meaningful factor solution a series of analyses was conducted. For each solution, the following was taken into consideration: theoretical fit, the number of factors with eigenvalues greater than 1.0, the amount of variance accounted for by each solution, the number of variables represented

within each factor, the strength of item loadings, the reasonableness of interpretation, and scree plot (Meyers et al., 2006). A series of analyses was conducted by not pre-determining the number of factors to emerge as well as forcing ten, nine, eight, seven, and six factor solutions. For each of the solutions examined, all 40 course climate items were included in the analysis.

Initial extraction with all 40 course climate items revealed nine factors with eigenvalues greater than 1.00. The nine-factor solution accounted for 59% of the total variance and 47% of the common variance prior to rotation. Examination of pattern matrix item loadings of this initial solution revealed that three items did not load on any factor greater than or equal to .30. Additionally, two factors had loadings of only two items. The initial solution of nine factors was, therefore, deemed inadequate. Therefore, subsequent analyses of all 40 items forced into a specified number of factors were conducted. The forced six-factor solution was deemed inadequate because some item loadings did not make conceptual sense. The forced seven-factor solution was also deemed inadequate because items believed to be two distinct factors loaded together onto one and total variance explained was less than could be explained by a forced eight-factor solution. The forced eight-factor solution revealed item loadings that made the most theoretical sense. It was expected that an eight-factor solution would be a reasonable solution. The three items that did not initially load onto any factor greater than or equal to .30 were removed (items 1, 26, and 40). The 37 remaining items were analyzed producing an eight-factor solution (unforced). This solution was found to be the most interpretable. The course climate variables included in the EFA are presented in the next section. Results of the accepted solution are presented in the results section.

## **Chapter IV**

### **Results**

Results are provided within three sections. The first section provides results for the first research question regarding identifying important course level dimensions believed to reflect motivationally relevant aspects of the course climate. Results of the exploratory factor analyses (EFA) are reported in this section. Next, descriptive statistics and bivariate correlations are provided on the resulting course climate, motivational beliefs, and self-reported grade. The final section addresses the second research question by examining the extent to which perceptions of course climate can predict motivational beliefs and self-reported grade for that course. The results of nine two-step hierarchical multivariate regression analyses are reported.

#### **Exploratory Factor Analyses**

Exploratory factor analyses using principal axis factoring with an oblique rotation were conducted to address the first research question. The solution ultimately accepted accounted for 59% of the total variance and 47% of common variance prior to rotation. The pattern matrix item loadings ranged from .32 to .75 and with the exception of two items, made conceptual sense. The finalized items and pattern matrix factor loadings are presented in Table 3.

The first factor, labeled autonomy support (initial eigenvalue = 8.26; extracted eigenvalue = 7.78), accounted for 21.04% of the common variance. This factor assesses the extent to which participants perceive that students in the course believe that the instructor is autonomy-supportive by enhancing intrinsic desire to learn by providing academic supports and encouragement to students. A total of nine items loaded on this

factor. The factor contained items hypothesized to load onto two distinct factors, autonomy support and the instructor support factor. The pattern loadings suggest that autonomy support (academic focused) and instructor support (emotional/social focused) may not be distinct as hypothesized, rather they may be conceptually the same. In terms of the item loadings, there were two items loading on this factor that also cross-loaded on other factors. Upon inspection of all the items, a decision was made to include only the top seven items in this factor for future analyses. The two cross-loaded items would be removed because they made more theoretical sense on other factors. The last item, “The instructor is respectful toward students” did not cross-load onto another factor at greater than .30, but did cross load on three other factors between .27 (academic press and instructor organization) and .29 (equity). The inclusion of the last item on this factor did not increase internal consistency, suggesting that the top seven items would best represent the items of this factor. The alpha reliability for the short seven-item scale was good ( $\alpha = .86$ ).

The second factor, labeled performance avoidance goal structure (initial eigenvalue = 4.16; extracted eigenvalue = 3.61) accounted for 9.75% of the common variance. This factor assesses the extent to which participants believe students in their course are focused on avoiding demonstrating incompetence to others. This factor had three items representing a performance avoidance goal structure, and one representing a performance approach goal structure. The alpha reliability for the four-item scale was low ( $\alpha = .61$ ). While the internal consistency of this scale is not ideal, the scale does serve as an important construct when understanding factors within a college course climate. A decision was made not to drop the last item (a performance approach item)

because if students perceive others as wanting to avoid demonstrating incompetence it is likely because there is some discussion of grades and/or student performance. If there were no discussion of grades or performance, then perhaps avoiding demonstration of incompetence would not be a salient dimension in a college course. Additionally, while there is some research to support the approach and avoidance dimensions as distinct (Elliot & McGregor, 2001; Elliot & Murayama, 2008) some of the seminal work in the achievement goal literature did not make this distinction (Ames, 1992; Ames & Archer, 1998). Additionally, some work has investigated students' perception of the goal structure, findings that indicated that students themselves could not make the distinction between the approach and avoidance goals when being interviewed (Urdan & Mestas, 2006).

The third factor, labeled student relatedness (initial eigenvalue = 2.58; extracted eigenvalue = 4.05), accounted for 5.53% of the shared variance prior to rotation. This factor, comprised of four items, reflect the extent to which participants believe the course climate facilitates students forming positive social relationships with one another. The alpha reliability for the four-item scale was adequate ( $\alpha = .72$ ).

The fourth factor, course situational interest (initial eigenvalue = 1.61; extracted eigenvalue = 1.10), accounted for 2.97% of the common variance. This factor assesses the extent to which participants believe that students in the course enjoy and are interested during course sessions. Three items required reverse coding because of negative wording. After recoding, higher scores on these items indicated that students perceive others to find the course interesting. Students who reported lower scores perceived that other students engage in tasks unrelated to the course and are bored during

course sessions. One item cross-loaded on this factor and the first factor, autonomy support. The item, “The instructor’s teaching style makes this course enjoyable for students.” makes more theoretical sense with items related to course situational interest, therefore all subsequent analysis will use a composite score comprising of the five items. The internal consistency was increased using the cross-loaded item from  $\alpha = .73$  (four items) to  $\alpha = .79$  (five items).

The fifth factor, academic press (initial eigenvalue = 1.54; extracted eigenvalue = 1.01), accounted for 2.72% of the shared variance. This factor reflects the extent to which participants believe the instructor presses students to really think about course material and complete challenging course requirements. Higher scores on these items indicate that students perceived the course as challenging because of rigorous expectations. One item expected to load onto the autonomy support factor cross-loaded loaded onto the academic press factor. The item, “The instructor encourages students to ask questions” suggests increased instructor expectations in terms of student learning by encouraging students to be actively involved during the course by asking questions. The item loading on both factors was the same at .34. The internal consistency for this scale was low  $\alpha = .66$  (five items).

The sixth factor, instructor organization (initial eigenvalue = 1.23; extracted eigenvalue = .70), accounted for 1.89% of the common variance. This factor reflects the degree to which students perceived that the instructor is prepared by organizing course activities and assignments well. There was a total of four items loading onto this factor. However, one item “Some students always try to show that they are better than other students in the course” did not make conceptual sense for inclusion within this factor.

Therefore, all subsequent analyses only include the top loading three items that have a clear reference to organization. The alpha reliability for the three-item scale was adequate ( $\alpha = .76$ ).

The seventh factor, labeled energy (initial eigenvalue = 1.16; extracted eigenvalue = .60), accounted for 1.61% of the shared variance. This factor was not hypothesized a priori. There were a total of three items loading onto this factor. This factor remained constant throughout the various EFAs conducted; therefore it was deemed that this factor should be retained in the final solution. However, upon inspection of the three items, it was apparent that only two items were conceptually similar. Both items assessed perceptions regarding putting forth energy or working hard in the course. These two items had been hypothesized to load into an academic press factor. It is plausible that the distinction between these two factors is that students may perceive a difference between being held to high expectations (academic press) versus actually putting forth the effort to complete course tasks (energy). The other item in this factor was conceptually distinct because the item assessed students treating one another fairly. All future analysis using energy will be comprised of only the two items. The alpha reliability for the two-item scale was low ( $\alpha = .66$ ).

The eighth and final factor, equity (initial eigenvalue = 1.11; extracted eigenvalue = .54), accounted for 1.50% of the common variance. This factor reflects the extent to which students perceive that students in the course are treated equally. All four items require reverse coding because of negative wording. After recoding, students who rated these items low perceived that some students are favored more than others. Conversely,



students who rated these items highly perceive all students as being treated equally by others in the course. The alpha reliability for the four-item scale was adequate ( $\alpha = .72$ ).

Table 3

*Pattern Matrix Factor Loadings for Principal Axis Factoring with Oblique Rotation*

Items	AS	PA	SR	CSI	AP	IO	EN	EQ
The instructor listens to how students like to do things.	<b>.69</b>	.18	.05	-.04	-.03	-.06	.04	-.14
Students think the instructor conveys confidence in them to do well in the course.	<b>.67</b>	-.13	-.05	-.03	-.04	.13	.20	.05
Students believe the instructor tries to understand how they see things before suggesting a new way to do things.	<b>.66</b>	-.05	-.10	.03	.04	.07	.04	-.03
Students believe the instructor takes a personal interest in students.	<b>.61</b>	-.02	.13	-.05	.08	.06	-.23	.13
Students feel the instructor makes an effort to get to know them.	<b>.60</b>	.05	.26	-.11	-.05	-.01	-.07	.09
Students in this course believe the instructor provides them with choices and options.	<b>.56</b>	.03	.09	-.20	-.05	-.01	.08	-.03
During course time, the instructor for this course encourages students to try their best.	<b>.52</b>	.16	.04	.01	<b>.36</b>	.07	.04	-.18
The instructor's teaching style makes this course enjoyable to students.	<b>.43</b>	-.07	.05	<b>-.37</b>	.04	.28	.01	.09
The instructor is respectful toward students.	<b>.36</b>	.00	-.10	.18	.27	.26	.18	-.29
An important goal for many students in this course is to avoid looking worse than others.	-.06	<b>.52</b>	-.07	.08	.05	.08	.10	.26
This course is set up so that students really focus on not doing worse than others.	.06	<b>.44</b>	.07	-.07	-.10	-.08	.03	.08
Many students just want to avoid performing poorly compared to other students.	.00	<b>.44</b>	.01	.16	.10	.00	-.10	-.04
Students in this course often talk about doing better than others.	.04	<b>.39</b>	.17	.00	-.02	.22	-.28	.09
In this course, students form friendships with one another.	-.09	-.03	<b>.75</b>	.06	-.01	.01	.08	-.04
Members of this course are interested in getting to know one another.	-.01	-.07	<b>.62</b>	.01	.00	.04	-.05	.06
Everyone gets a chance to get to know other students in the class.	.16	.11	<b>.56</b>	-.01	-.02	-.07	.00	-.03
Students in this course are helpful to each other.	.06	.01	<b>.50</b>	-.02	.12	-.01	.22	-.08

Table 3

*Pattern Matrix Factor Loadings for Principal Axis Factoring with Oblique Rotation  
Continued*

Items	AS	PA	SR	CSI	AP	IO	EN	EQ
Students feel course time is boring.	-.06	.05	.02	<b>.66</b>	.12	-.16	-.04	.04
During course time, students often engage in non-class activities (internet, chatting, etc.).	-.02	.02	.05	<b>.52</b>	-.11	.05	.03	.15
During course time, students are not engaged in what the teacher wants them to be doing.	-.07	.13	-.03	<b>.52</b>	-.12	.04	.10	.22
Students look forward to coming to class.	.26	.01	.07	<b>-.49</b>	.01	.28	-.04	.11
Students are expected to complete challenging assignments in this course.	-.01	.07	.02	.03	<b>.69</b>	-.03	-.06	.03
In this course, the instructor gives work that makes students really think.	.03	-.10	.06	-.09	<b>.45</b>	-.04	.10	-.07
Students in this course believe the instructor presses them to do thoughtful work.	<b>.31</b>	-.20	.05	-.05	<b>.41</b>	.11	-.02	.15
The instructor allows most students to get away with doing easy work.	.18	<b>.35</b>	-.02	.07	<b>-.37</b>	.05	-.06	.11
The instructor encourages students to ask questions.	<b>.34</b>	.07	.01	.02	<b>.34</b>	.24	.09	-.09
Students have a clear idea of what will get covered in each course session.	.03	-.14	.01	-.14	.11	<b>.50</b>	.08	-.25
Students believe this is a well-organized course.	.20	-.11	-.02	-.24	-.01	<b>.48</b>	.12	.08
In this course, students believe assignments are clear to understand.	.16	.00	-.10	<b>-.34</b>	-.11	<b>.48</b>	.09	-.16
Some students always try to show that they are better than other students in this course.	-.15	.22	.15	.16	-.09	<b>.46</b>	-.22	.11
Students in this course treat one another fairly.	.09	-.09	.18	.14	-.04	.02	<b>.56</b>	-.08
Students work hard to complete course requirements.	-.05	.18	.10	-.25	.24	.02	<b>.35</b>	.10
Most students put forth a great deal of energy and time for this course.	-.10	.13	.19	-.24	<b>.32</b>	.07	<b>.32</b>	.14
Students believe the instructor favors the students he/she regards as smart.	.00	.01	-.02	.09	.03	-.03	.07	<b>.78</b>
Certain students are favored more than others.	.00	.02	.11	.18	.06	.02	-.13	<b>.50</b>
The instructor makes it clear that doing better than your classmates is the only way to get a good grade in this course.	.01	<b>.35</b>	-.08	-.03	-.04	-.01	.01	<b>.46</b>
Some students have been treated unkindly by other students.	.07	.25	-.14	.03	-.14	-.05	-.17	<b>.33</b>

*Note.* Factor loadings > .30 are in boldface. AS = Autonomy Support; PA = Performance Avoidance Goal Structure; SR = Student Relatedness; CSI = Course Situational Interest; AP = Academic Press; IO = Instructor Organization; EN = Energy; EQ = Equity.

## Descriptive Results

Scale scores were computed by averaging the items (five point scaled) associated with the respective climate or motivational belief factor. The mean computation feature of SPSS was used to create course climate and motivational beliefs composite scores. Therefore, the mean computation was based upon the number of valid responses for that respective composite score. The self-reported grade ranged from a 12 (A) to 1 (F). The means and standard deviations are presented in Table 4.

**Bivariate analyses.** Table 4 presents the Pearson's bivariate correlations among composite course climate scores, eight motivational beliefs, and self-reported grade. The correlations among course climate factors ranged from ( $r = .65$ ) to ( $r = -.54$ ). The strongest positive correlation among course climate variables was between course situational interest and instructor organization. The strongest negative correlation occurred between performance avoidance goal structure and equity. The pattern of correlations among course climate factors indicate that autonomy support was positively related with most other climate variables (except for performance avoidance goal structure). Performance avoidance goal structure was negatively related to course situational interest ( $r = -.19$ ), academic press ( $r = -.19$ ), instructor organization ( $r = -.17$ ), and equity ( $r = -.54$ ). Performance avoidance goal structure was not significantly associated with energy ( $r = .03$ ) or autonomy support ( $r = .04$ ). The only positive relation found between performance avoidance goals structure with another climate factor was with student relatedness ( $r = .14$ ). Student relatedness was positively related to five other climate factors, but not significantly related with instructor organization ( $r = .10$ ) nor equity ( $r = .01$ ). The pattern of relations found between course situational interest to

other aspects of the climate were positive, except for the relation to performance avoidance goal structure which was negative. Energy was not significantly correlated with performance avoidance goal structure ( $r = .03$ ) or equity ( $r = .05$ ), but all other relations among the five other climate factors were positively related. Last, equity was negatively related to performance avoidance goal structure ( $r = -.54$ ), no relation to student relatedness ( $r = .01$ ) or energy ( $r = .05$ ); but positively correlated with autonomy support ( $r = .11$ ), course situational interest ( $r = .31$ ), academic press ( $r = .29$ ), and instructor organization ( $r = .32$ ). In general, these correlations findings suggest that most course climate factors were positively related with one another. The notable exception was that performance avoidance goal structure was often negatively related to other aspects of the course climate.

The correlations among course climate factors and students' personal motivational beliefs ranged from ( $r = .60$ ) to ( $r = -.45$ ). When students perceived their instructor as highly autonomy-supportive they generally self-reported higher levels of self-efficacy, attainment value, utility value, personal interest, and adoption of mastery approach goals for the course. Students' perceived level of autonomy support in the course was correlated with several adaptive motivational beliefs. As anticipated, increased instructor autonomy support was negatively related to students' anxiety for the course. The relation between autonomy support and the two performance achievement goals was not significant. Autonomy support was positively correlated with self-reported grade for the course ( $r = .15$ ).

The relations between performance avoidance goal structure to other aspects of the climate were as anticipated. The more participants perceived students in their course

as striving to avoid looking incompetent, the more likely participants reported feeling anxious about the course and tended to adopt both forms of performance (approach  $r = .36$ ; avoidance  $r = .45$ ) achievement goals for the course. A perception of a performance avoidance goal structure was not related to students' self-reported grade for the course.

The correlation between student relatedness to students' personal motivational beliefs were generally non-significant, except for the positive relationship with adopting mastery approach goals ( $r = .16$ ) and performance avoidance goals ( $r = .12$ ). It is plausible that the more students interact with one another, the more students' achievement goals are made salient to one another, therefore making students' reflect about the achievement goals they adopt for the course. Student relatedness was not correlated with students' self-reported grade for the course.

Relations among course situational interest and personal motivational beliefs were in the anticipated direction. The more students perceive the course as engaging, the more likely they were to report higher self-efficacy, attainment value, utility value, personal interest, adoption of mastery approach goals. There was a negative correlation between course situational interest and anxiety ( $r = -.44$ ) and adoption of performance avoidance goals ( $r = -.14$ ). The relation between course situational interest and adoption of performance approach goals was not significant. Students who perceived the course as situationally interesting were more likely to report anticipation of earning a higher grade in that course ( $r = .24$ ).

Academic press was positively correlated with adaptive motivational beliefs such as self-efficacy ( $r = .25$ ), attainment value ( $r = .42$ ), utility value ( $r = .30$ ), personal interest ( $r = .23$ ), and adoption of mastery approach goals ( $r = .37$ ). The relation between

academic press and anxiety ( $r = -.06$ ) was non-significant. Additionally, both dimensions of performance goal adoptions were not significantly related to academic press. A significant relation was not found between academic press and students' self-reported grade for the course.

Of the relations among course climate factors and personal motivational beliefs the strongest relationships were found between instructor organization and adaptive motivational beliefs. Instructor organization was positive related to self-efficacy ( $r = .60$ ), attainment value ( $r = .38$ ), utility value ( $r = .46$ ), personal interest ( $r = .58$ ), and mastery approach goal adoption ( $r = .36$ ). Also, there was a substantial negative relation to anxiety ( $r = -.45$ ) indicating the more students perceive the instructor as organized the more likely they are to report adaptive motivational beliefs, and report less negative beliefs such as anxiety. Additionally, perceptions of an organized instructor were positively correlated with self-reported course grade ( $r = .24$ ).

Energy was positively correlated with attainment value ( $r = .26$ ), utility value ( $r = .12$ ), personal interest ( $r = .15$ ), and adoption of mastery goals ( $r = .30$ ). It was interesting that the relationship between energy and self-efficacy was not significant ( $r = .07$ ). It was anticipated that the more energy students put forth in the course, the more self-efficacious they would feel regarding learning course material. However, it seems that for this sample it is not the case. A non-significant relation was found between energy and self-reported course grade.

Last, all the relations between equity and motivational beliefs were significant. Positive correlations were found between equity and self-efficacy ( $r = .28$ ), attainment value ( $r = .35$ ), utility value ( $r = .23$ ), personal interest ( $r = .22$ ), and mastery approach

goal adoption ( $r = .18$ ). Negative relationships were found between equity and anxiety ( $r = -.43$ ), performance approach goal adoption ( $r = -.22$ ), and performance avoidance goal adoption ( $r = -.33$ ). Findings from these relationships indicate that the more participants perceived that students were treated equitably; the less likely participants reported feeling anxiety and adopting performance goals. Participants reported more adaptive motivational beliefs when participants perceived other course members to be treated equally. A non-significant relation was found between equity and self-reported course grade.

Several of the correlations among motivational beliefs were strong. Self-efficacy was positively related with attainment value ( $r = .45$ ), utility value ( $r = .49$ ), personal interest ( $r = .66$ ), adoption of mastery approach goals ( $r = .50$ ), and self-reported course grade ( $r = .48$ ). In terms of negative relations, the highest inverse relationship was with anxiety ( $r = -.60$ ) followed by adoption of performance avoidance goals ( $r = -.14$ ). Self-efficacy was not related to adoption of performance approach goals ( $r = .02$ , ns).

Students who self-reported high attainment value also tended to report higher levels of utility value ( $r = .52$ ), personal interest ( $r = .52$ ), adoption of mastery approach goals ( $r = .70$ ), and performance approach goal adoption ( $r = .13$ ), and were less likely to feel anxious ( $r = -.20$ ). These results suggest students who reported that learning course content was important to them also indicated they believed the course content would be relevant/useful later in life and personally interesting. These students reported they adopted goals to master the material and to do well in comparison to others. These students were less likely to report feeling anxious when thinking about the course.



Students who reported a high level of attainment value for the course also tended to report anticipating a higher course grade ( $r = .12$ ).

In terms of utility value, the strongest positive correlation was found with personal interest ( $r = .72$ ), adoption of mastery approach goals ( $r = .57$ ), and self-reported grade ( $r = .21$ ). The more students reporting feeling a strong utility value for the course, the less likely they reported feeling anxious ( $r = -.37$ ). The pattern of findings was similar for personal interest, where an inverse relation was found with anxiety ( $r = -.45$ ) and a positive correlation with adoption of mastery approach goals ( $r = .58$ ).

Anxiety was negatively related to adaptive motivational beliefs. The only positive relations were found with adoption of performance approach goals ( $r = .17$ ) and performance avoidance goals ( $r = .34$ ). The highest correlation among motivational beliefs variables was between adoption of performance approach and performance avoidance goals ( $r = .75$ ).

Adaptive motivational beliefs were correlated with students' self-reported grade. Students were more likely to self-report earning a higher grade when they reported feeling efficacious ( $r = .48$ ), being personally interested in the course ( $r = .30$ ), possessing a high utility value for the course ( $r = .21$ ), reporting adoption of mastery goals ( $r = .20$ ), and having a high attainment value for the course ( $r = .12$ ). A negative relation was found between anxiety and course grade ( $r = -.48$ ) indicating that the more anxiety students felt when thinking about the course, the lower the grade they anticipated receiving in the course.

Table 4

*Summary of Intercorrelations, Means, and Standard Deviations for Course Climate, Personal Motivational Beliefs, and Self-Reported Grade*

		1	2	3	4	5	6	7	8
1.	AS	-	.04	.31***	.57***	.39***	.52***	.26***	.11*
2.	PA		-	.14*	-.19**	-.19**	-.17**	.03	-.54***
3.	SR			-	.15**	.25***	.10	.34***	.01
4.	CSI				-	.39***	.65***	.31***	.31***
5.	AP					-	.36***	.40***	.29***
6.	IO						-	.25***	.32***
7.	EN							-	.05
8.	EQ								-
9.	SE								
10.	AV								
11.	UV								
12.	PI								
13.	AX								
14.	MP								
15.	PP								
16.	PV								
17.	GR								
	<i>M</i>	3.61	2.57	3.38	3.36	3.88	3.86	3.70	4.08
	<i>SD</i>	.70	.69	.65	.80	.54	.78	.72	.70

Table 4

*Summary of Intercorrelations, Means, and Standard Deviations for Course Climate, Personal Motivational Beliefs, and Self-Reported Grade Continued*

		9	10	11	12	13	14	15	16	17
1.	AS	.33***	.23***	.32***	.38***	-.21***	.29***	.03	.03	.15*
2.	PA	-.24***	-.22***	-.22***	-.13*	.35***	-.12*	.36***	.45***	.00
3.	SR	.05	.09	.09	.10	-.01	.16**	.11	.12*	.01
4.	CSI	.48***	.33***	.40***	.58***	-.44***	.39***	-.08	-.14*	.24***
5.	AP	.25***	.42***	.30***	.23***	-.06	.37***	-.02	-.03	.02
6.	IO	.60***	.38***	.46**	.58***	-.45***	.36***	.00	-.11	.24***
7.	EN	.07	.26***	.12*	.15**	.07	.30***	.03	.11	-.06
8.	EQ	.28***	.35***	.23***	.22***	-.43***	.18**	-.22***	-.33***	-.02
9.	SE	-	.45***	.49***	.66***	-.60***	.50***	.02	-.14*	.48***
10.	AV		-	.52***	.52***	-.20***	.70***	.13*	.07	.12*
11.	UV			-	.72***	-.37***	.57***	.00	-.06	.21***
12.	PI				-	-.45***	.58***	.07	-.04	.30***
13.	AX					-	-.17**	.17**	.34***	-.48***
14.	MP						-	.15*	.08	.20***
15.	PP							-	.75***	.09
16.	PV								-	-.07
17.	GR									-
	<i>M</i>	3.77	4.24	3.67	3.71	2.63	3.92	3.28	3.09	9.80
	<i>SD</i>	.78	.63	.94	.99	.88	.69	.93	1.02	1.96

Note. *Course Climate*: AS = Autonomy Support; PA = Performance Avoidance Goal Structure; SR = Student Relatedness; CSI = Course Situational Interest; AP = Academic Press; IO = Instructor Organization; EN = Energy; EQ = Equity. *Personal Motivational Beliefs*: SE = Self-Efficacy; AV = Attainment Value; UV = Utility Value; PI = Personal Interest; AX = Anxiety; MP = Mastery Approach Goal Adoption, PP = Performance Approach Goal Adoption; PV = Performance Avoidance Goal Adoption; *Self-Reported Grade*: GR = Self-Reported Course Grade.

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

### **Hierarchical Regressions Predicting Motivational Beliefs**

Results from regression analyses are presented to address the question; To what extent can students' perceptions of the course climate predict personal motivational beliefs? Data screening was conducted to meet assumptions necessary for regression analysis. Examination of the predictor bivariate correlations indicated that none of the predictors would have to be excluded due to high intercorrelations (i.e. greater than .70). Additionally, the Variance Inflation Factor (VIF) values were examined to test for multicollinearity among predictor variables. None of the VIF values were greater than 10 indicating multicollinearity was not an issue (Meyers et al., 2006).

Eight two-step block entry regressions were conducted to predict students' motivational beliefs. In the first step of each regression, students' perception of autonomy support was entered. Autonomy support was chosen for entry during the first step because students' perception of autonomy support may shape students' perception of other course climate variables (Shih, 2008; Stornes, Bru, & Idsoe, 2008; Vansteenkiste et al., 2004). Autonomy support was highly correlated with other course climate variables. Therefore, a decision was made to enter it first. In addition, results of the first step could be compared with previous research that has used autonomy support as the sole measure of the learning environment (Shih, 2008). All other course climate predictors were entered in the second step (performance avoidance goal structure, student relatedness, course situational interest, academic press, instructor organization, energy, and equity). Results from the eight regressions each predicting personal motivational beliefs (self-efficacy, attainment value, utility value, personal interest, anxiety, mastery approach goal

adoption, performance approach goal adoption, and performance avoidance goal adoption) are presented in Table 5.

Autonomy support entered in step 1 predicted a significant amount of variance in self-efficacy,  $F(1, 303) = 37.09, p < .001$ ; attainment value,  $F(1, 303) = 17.10, p < .001$ ; utility value,  $F(1, 303) = 34.36, p < .001$ ; personal interest,  $F(1, 303) = 51.58, p < .001$ ; anxiety,  $F(1, 303) = 13.51, p < .001$ ; and mastery approach goal adoption,  $F(1, 303) = 27.49, p < .001$ . Students who viewed the course climate as more supportive of autonomy were more likely to report higher levels of self-efficacy, attainment value, utility value, interest, and adopt mastery goals. Students who viewed the course as less autonomy-supportive were more likely to report greater anxiety. The step 1 results predicting performance approach goal adoption was not significant  $F(1, 303) = .31, p = .58$ , nor was performance avoidance goal adoption  $F(1, 303) = .20, p = .66$ .

By including the other seven course climate variables in the second step of each regression models, the ability to predict motivational beliefs significantly improved. Adding the seven other course climate predictors to the regression equation increased the amount of variance by 29% for self-efficacy,  $F(7, 296) = 20.83, p < .001$ ; 23% for attainment value,  $F(7, 296) = 13.32, p < .001$ ; 16% for utility value,  $F(7, 296) = 9.17, p < .001$ ; 27% for personal interest,  $F(7, 296) = 19.07, p < .001$ ; 36% for anxiety,  $F(7, 296) = 25.87, p < .001$ ; and 15% for mastery approach goal adoption  $F(7, 296) = 8.26, p < .001$ . At step 2 of the regression equation, the full model predicting performance approach goal adoption became significant. The increase in variance explained by 14% for performance approach goal adoption  $F(7, 296) = 7.08, p < .001$ . Also, the full model predicting performance avoidance goal adoption became significant, increasing the amount of

variance explained by 24% for performance avoidance goal adoption  $F(7, 296) = 13.03, p < .001$ . For several of the full regression models predicting motivational beliefs, autonomy support significantly accounted for the prediction of the outcome variable only at step 1. Once other climate predictor variables were entered into the regression equation at step 2, autonomy support was no longer a significant individual predictor of the outcome variable. The significance of the overall models strongly suggest perceptions of the course climate are important, it is necessary to examine how each individual course climate variable specifically contributes to the prediction of each outcome variable

**Self-efficacy.** When all other course climate variables were held constant, course situational interest and instructor organization were the strongest predictors of self-efficacy. Students who perceived the course sessions to be interesting ( $\beta = .15, p < .05$ ) and perceived the instructor to be organized ( $\beta = .50, p < .001$ ) were more likely to report they felt efficacious about learning course content. The beta weight for instructor organization was considerably larger than any other climate predictor. In contrast, negative predictors of self-efficacy were perceptions of a performance avoidance goal structure ( $\beta = -.11, p < .05$ ) and energy ( $\beta = -.12, p < .05$ ). Students who perceived that the course climate was structured to encourage adoption of performance avoidance goals were more likely to rate their self-efficacy for learning in the course lower. Additionally, students who perceived that a lot of effort was required for the course reported feeling less efficacious in the course.

Energy's beta weight for predicting self-efficacy was a surprising finding given that the correlation between energy and self-efficacy was not significant. While the

amount of perceived effort students put forth in the course is practically zero correlated with students' confidence to learn course material well, once other course climate predictors are taken into account, lower energy ratings significantly predicted higher self-efficacy ratings. These results can be described as a classic suppressor effect (Kline, 2010). Pandey and Elliott (2010) claim that suppressor variables improve the overall predictive power of a regression model by accounting for/suppressing some error or in one or more other predictors.

**Attainment value.** Results from the full model revealed that when all other course climate variables were controlled for academic press ( $\beta = .24, p < .001$ ), instructor organization ( $\beta = .20, p < .01$ ), and equity ( $\beta = .20, p < .01$ ) were significant predictors of attainment value. Students who reported a greater importance for doing well in that course perceived that climate as rigorous, well organized, and where all students were treated equitably.

**Utility value.** The findings from the full model predicting utility value were different from the results predicting attainment value. When all course climate variables were controlled for, instructor organization ( $\beta = .30, p < .001$ ) and performance avoidance goal structure ( $\beta = -.15, p < .05$ ) were significant predictors of utility value. The more students perceived the course instructor to be organized, the more likely they were to report the value for the course material as relevant or useful for their lives. An inverse relation was found between performance avoidance goal structure and utility value. Students who perceived a high level of performance avoidance goal structure were less likely to report higher utility value beliefs.

**Personal interest.** In the full model, when other course climate predictors were held constant, course situation interest ( $\beta = .36, p < .001$ ) and instructor organization ( $\beta = .37, p < .001$ ) were significant predictors of personal interest. Students who perceived other course members were interested during course sessions (situational), the more likely they were to rate their own personal interest for learning the course content. Students who perceived the instructor as highly organized were more likely to indicate that they were personally interested in the course material.

**Anxiety.** Anxiety is assumed to be a negative motivational belief (Garcia & Pintrich, 1996; Shih, 2008). A total of six of the eight climate variables were significant predictors of anxiety. The course climate predictors that were related positively were: performance avoidance goal structure ( $\beta = .16, p < .01$ ), academic press ( $\beta = .19, p < .001$ ), and energy ( $\beta = .18, p < .01$ ). These results suggest that students were more likely to report feeling anxious when thinking about the course when they perceived the courses' climate as focused on stressing performance avoidance goals, when they perceived the course rigorous in terms of learning expectations, and when they perceived students were effortful in completing course activities. In contrast, the course climate predictors negatively related to anxiety were course situational interest ( $\beta = -.29, p < .001$ ), instructor organization ( $\beta = -.28, p < .001$ ), and equity ( $\beta = -.23, p < .001$ ). These findings indicate students' who perceive the course climate as being situationally interesting, the course instructor as well organized, and climate where students were treated in an equitable manner, the less likely they were to report anxiety when thinking about that course.



A suppression effect occurred in full regression model predicting anxiety. Academic press was weakly (negatively) related to anxiety based upon bivariate correlation. However, once the other climate variables were controlled, higher academic press scores predicted higher anxiety. Additionally, energy's relation to anxiety was near zero based on bivariate correlation; but inclusion of energy enhanced the prediction of anxiety. These findings suggest that independent variables that are insignificant at the bivariate level may play an important role in enhancing overall prediction power of the model (Pandey & Elliott, 2010).

**Goal adoption.** Results from the full model, when other predictors were controlled, course situational interest ( $\beta = .17, p < .05$ ), academic press ( $\beta = .18, p < .01$ ), instructor organization ( $\beta = .14, p < .05$ ), and energy ( $\beta = .12, p < .05$ ) emerged as significant individual predictors of mastery approach goal adoption. Participants who perceived course sessions as engaging to students, a press for understanding was stressed, and the more students put forth energy for completing course tasks, the more likely they were to report adopting mastery approach goals for the course. These findings were different from the results predicting performance approach and performance avoidance goal adoption. When all other course climate variables were controlled, performance avoidance goal structure ( $\beta = .34, p < .001$ ) was the only significant individual predictor of performance approach goal adoption. In a similar manner, performance avoidance goal structure ( $\beta = .37, p < .001$ ) was the only individual significant predictor of performance avoidance goal adoption. Students who were likely to rate the course as one in which performance avoidance goal structure is emphasized were more likely to rate adoption of performance goals, both approach and avoidance goals.

### **Hierarchical Regressions Predicting Self-Reported Grade**

The regression results predicting self-reported grade are presented in Table 6. Autonomy support entered in step 1 predicted a significant amount of variance for self-reported grade,  $F(1, 303) = 6.52, p < .05$ . Students who viewed the course climate as more autonomy supportive were more likely to report earning a higher course grade. By including the other seven course climate variables in the second step the ability to predict self-reported improved. Adding the seven other course climate predictors to the regression equation increased the amount of variance by 9% for self-reported grade,  $F(7, 296) = 4.17, p < .001$ .

Evaluation of the individual course climate predictors when the other climate predictors were held constant indicated that course situational interest ( $\beta = .23, p < .01$ ) and instructor organization ( $\beta = .19, p < .05$ ) were significant individual predictors. Inverse relations were found for energy ( $\beta = -.15, p < .05$ ) and equity ( $\beta = -.14, p < .05$ ). Participants who perceived course members to be interested during course sessions and the instructor organized were more likely to indicate anticipation of a higher final course grade. Participants who perceived that students in that course did not have to put forth a great deal energy and students were not treated equitably in the course reported anticipation of receiving a higher course grade.

Suppressor effects were found in the full model predicting self-reported grade. While energy and equity both were insignificantly (negative) correlated to self-reported grade. However, once other predictors were controlled the weight of energy and equity became significant. This finding suggests that incorporating these climate predictor variables enhanced the predictive model for self-reported grade (Pandey & Elliott, 2010).

Table 5

*Hierarchical Multiple Regression Analyses Predicting Motivational Beliefs*

Predictor	Self-Efficacy		Attainment Value		Utility Value		Personal Interest	
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Step 1	.11***		.05***		.10***		.14***	
Autonomy Support		.33***		.23***		.32***		.38***
Step 2	.29***		.23***		.16***		.27***	
Autonomy Support		-.00		-.02		.07		-.00
Perf. Avoid. Structure		-.11*		-.03		-.15*		-.01
Student Relatedness		.03		-.02		.04		.04
Course Sit. Interest		.15*		.02		.11		.36***
Academic Press		.03		.24***		.11		-.03
Instructor Org.		.50***		.20**		.30***		.37***
Energy		-.12*		.11		-.05		-.05
Equity		.01		.20**		-.02		-.00
Total $R^2$	.39***		.26***		.24***		.40***	

Predictor	Anxiety		Mastery Ap. Goal		Perf. Ap. Goal		Perf. Av. Goal	
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Step 1	.04***		.08***		.00		.00	
Autonomy Support		-.21***		.29***		.03		.03
Step 2	.36***		.15***		.14***		.24***	
Autonomy Support		.03		.00		-.02		.02
Perf. Avoid. Structure		.16**		-.04		.34***		.37***
Student Relatedness		-.07		.05		.06		.03
Course Sit. Interest		-.29***		.17*		-.08		-.01
Academic Press		.19***		.18**		.04		.06
Instructor Org.		-.28***		.14*		.12		-.01
Energy		.18**		.12*		-.01		.09
Equity		-.23***		.00		-.06		-.12
Total $R^2$	.39***		.21***		.14***		.24***	

Note.  $N = 305$ . *Course Climate*: Perf. Avoid. Structure = Performance Avoidance Goal Structure. *Motivational Beliefs*: Mastery Ap. Goal = Mastery Approach Goal Adoption; Perf. Ap. Goal = Performance Approach Goal Adoption; Perf. Av. Goal = Performance Avoidance Goal Adoption.

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

Table 6

*Regression Results Predicting Self-Reported Grade*

Predictor	Self-Reported Grade	
	$\Delta R^2$	$\beta$
Step 1	.02*	
Autonomy Support		.15*
Step 2	.09***	
Autonomy Support		-.02
Perf. Avoid. Structure		-.01
Student Relatedness		.03
Course Sit. Interest		.23**
Academic Press		-.04
Instructor Org.		.19*
Energy		-.15*
Equity		-.14*
Total $R^2$	.11***	

Note.  $N = 305$ . *Course Climate*: Perf. Avoid. Structure = Performance Avoidance Goal Structure.

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

## **Chapter V**

### **Discussion**

This final chapter will concentrate on the discussion of these two major findings and the two research questions addressed in this research study: (1) Do the eight hypothesized motivationally relevant aspects of a course climate form distinct and salient dimensions of a college course climate? (2) To what extent can students' perceptions of a course climate predict their motivational beliefs and self-reported course grade for that course? The discussion will provide an integration of the results of the present research to prior work, identify research limitations, present suggestions for future research, and offer practical applications for using findings from the present research.

#### **Motivationally Relevant Aspects of the Course Climate**

The EFA results indicate that a course's climate is multi-dimensional. The results of the present study provide evidence that there are distinct and salient dimensions of a college course climate. The instrument developed was adequate for research purposes. Each subscale was found to possess adequate to good internal consistency reliability. Regarding validity, the correlations among course climate subscales was as anticipated.

The following sections describe each factor; the items comprised in each factor; and provide some rationale for why the resulting factors and items may have differed from anticipated factors/item loadings. Additionally, the following sections will provide a discussion of the similarities and differences drawn between findings from present study and earlier research in regard to specific dimensions of a college course's climate.

**Autonomy support.** The items assessing perceptions of instructor support and autonomy support loaded onto one factor rather than on two separate factors. The one

factor loading indicates that instructor support (taking a personal interest in students) and autonomy support (supporting students' internal motives) are not distinct and salient dimensions of the course. Rather, college students perceive instructor supportiveness, both social/affective and academic support similarly. It is plausible that for an instructor to most effectively support students' autonomy, the instructor should take a personal interest in students in addition to providing academic supports.

One aspect of an autonomy-supportive instructor, not fully expressed in previous research with college students, is that for teachers to be autonomy-supportive they must actively connect with students (Klassen, Perry, & Frenzel, 2012). During course sessions it may take more of a focused effort on the part of the instructor to learn about students. The amount of time undergraduate students spend with their instructor may be limited depending on the frequency and duration of course sessions. Also, the ability to get to know students is also made more difficult as the course enrollment size increases. For these reasons, it was preferable to also assess students' perceptions regarding the social interactions between the instructor and students, specifically the degree to which students' feel that the instructor makes an effort to get to know students.

It is through social interactions, interactions that relay messages to students that the instructor cares about them and wishes them success, can the academic supports be fully realized. An autonomy-supportive instructor must care to know about students' interests and preferences, so that academic supports can be more individualized in hopes of sparking students' intrinsic motivation. Patrick et al. (2011) suggest that effective instructional practices alone may be insufficient for an adaptive mastery focused learning environment, because a positive relational or social climate is also necessary. The role of

others in the learning environment, particularly with teachers and with peers, in offering social support has been found to be an important for supporting motivation (Freeman et al., 2007; Gillen, Wright, & Spink, 2011; Patrick et al., 2007; Skinner & Belmont, 1993, Wentzel & Wigfield, 2007).

The results from the present research are important because a majority of research on autonomy support has been investigated with younger students (Garcia & Pintrich, 1996). Of the research conducted with college students, the social interaction aspect of autonomy support has been underemphasized. Comparing results across research is sometimes difficult because other labels are used for a similar constructor, or constructs are labeled the same but are defined differently. For example, Freeman et al. (2007) examined college freshmen sense of belonging in a college classroom and belonging more broadly at the campus level. The instructor warmth and openness scale contained items to assess students' perceptions that the instructor socially interacts with students and provides them with academic supports. While the researchers did not identify the "instructor warmth and openness" as autonomy support, items used for their scale are critical aspects of autonomy support, and therefore should be viewed as autonomy support. Findings from the present study and those from Freeman provide support regarding the importance of assessing students' perceptions that a course instructor provides them with social and academic support.

Caution is also needed when researchers use the same label for a conceptually distinct construct. For example, Garcia and Pintrich (1996) assessed perceived classroom autonomy as the degree to which students reported being allowed to participate in course decision-making. The definition used in that research does not represent the construct of

autonomy support well because it only narrowly represents a complex and multi-faceted construct (Katz & Assor, 2007; Reeve et al., 2004; Stefanou et al., 2004). Autonomy support is more than just allowing students to be involved in decision-making opportunities.

The findings from the present study suggest that autonomy support is an important dimension of a course that can be assessed. The assessment of autonomy support in the present study highlights the importance of both social and academic supports offered to students, and is not narrowly confined to student decision-making. Autonomy support is clearly one aspect of the climate that the instructor has the most control over. Other aspects of the climate that were found to be the most positively correlated to autonomy support were instructor organization and course situational interest. It may be that these three aspects of the climate were related because they are more focused on instructor behaviors rather than on student behaviors.

**Performance avoidance goal structure.** A climate where students are concerned with avoiding performing poorly compared to others is a performance avoidance goal structure. This aspect of a course's climate was the only one negatively correlated with some of other climate factors. The strongest negative relation was found between performance avoidance goal structure and equity indicating that the more students perceive a performance avoidance goal structure, the more likely they are to perceive students are treated inequitably. Other significant negative relations suggest that the more highly a participant rates the climate as fostering a performance avoidance goal structure the less likely he/she is to find the course as situationally interesting, the less



likely he/she is to perceive rigorous academic expectations, and less likely he/she is to believe that the course instructor is organized.

Students' perceptions of the goals emphasized in the learning environment, or goal structure, has been an important component within achievement goal theory research (Meece et al., 2006; Murayama, Elliot, & Yamagata, 2011; Wolters, 2004). There is a substantial empirical basis for the distinction between different personal achievement goals, and in particular, the distinction between performance approach and performance avoidance personal goals. However, there is a scarcity of research that has assessed whether these two performance goal structures should indeed be separated (Schwinger & Stiensmeier-Pelster, 2010). Researchers have theorized that the separation between the two performance goal structures is justified given the separation of the two performance achievement goals (Liem et al., 2008).

The pattern loadings indicate that the three performance avoidance items loaded together with one performance approach item, resulting in a factor of four items. The two other performance approach items were more highly loaded on other factors. The findings from the present study are different from those found by Schwinger and Stiensmeier-Pelster (2011), where a performance approach and performance avoidance classroom goals did form distinct factors using confirmatory factor analysis. Findings may differ because the present study used EFA whereas Schwinger and Stiensmeier-Pelster (2011) used CFA.

The finding that students' perceptions of a performance avoidance goal structure in a college course is important because it provides some support for this goal structure at a college level. Participants who rated this aspect of the climate highly tended to report

lower adaptive motivational beliefs and reported greater anxiety. A novel finding from the present study was that a perception of a performance avoidance goal structure was most strongly negatively related to equity. Students who perceive a course climate as emphasizing performance avoidance goals are less inclined to report perceptions that course members treat one another fairly. The results suggest an optimal climate for college students is one where students are not focused on avoiding incompetence.

**Student relatedness.** Students' perceptions regarding the degree to which students in the course form friendly relations with other students was found to be a distinct and salient dimension in the climate. This dimension of the course is focused on the social interactions among peers in the course. The ability to form and maintain positive relations has been viewed as a motivational resource (Ryan & Deci, 2000). Education is inherently a social and interpersonal process (Goodenow, 1992; Patrick & Ryan, 2005). Positive peer relations among young students have been found to be a beneficial aspect of a learning environment (Furrer & Skinner, 2003; Gillen et al., 2011; Patrick et al., 2008; Schweinle et al., 2006; Ryan & Patrick, 2001; Wentzel, 2000). The importance of positive social functioning has been found to be especially important during adolescence (Anderson et al., 2004; Hardré & Sullivan, 2008; Ryan & Patrick, 2001). The importance of positive social interactions of students in a course has also been found with college samples (Freeman et al., 2007; Pittman & Richmond, 2007; Summers & Svinicki, 2007). It was hypothesized that student relatedness would be an important aspect of the climate.

Findings of the present study are important because this result fits well within theoretical frameworks such as self-determination theory that explicitly state the

importance of positive social relations with others, such as feeling connected/related to others as an important basic human need (Ryan & Deci, 2000). Results of the present study indicate that students' perceptions of relatedness with peers are an aspect of the climate that can be assessed. However, the pattern of relations in the regressions suggests that student relatedness was not a significant individual predictor of any of the outcome variables examined in this study.

**Course situational interest.** Course situational interest was a salient and distinct dimension of a college course. There is an extensive research base on interest. Two areas of investigation within this research tradition have been on the distinction between personal and situational interest (Schiefele, 2009) and on interest development (Hidi & Renninger, 2006). Course situational interest defined in the present research as the degree to which students in the course perceive their peers as being interested during course sessions. Indicators of course situational interest include perceiving peers as enjoying and displaying focused attention during instruction (Ainley, 2006; Hidi & Harackiewicz, 2000; Schraw & Lehman, 2001).

Students' perceptions of their peers' level of interest during course sessions is an important aspect of the learning climate. Participants who highly rated this aspect of a college climate perceived that students in the course were on task, were interested, and enjoyed course sessions (course situational interest). Participants also reported on their own personal interest. Both forms of interest, situation and personal, were assessed in the present study.

One important difference between the course situational interest scale used in the present study and interest assessed in other research is the emphasis on focused attention.

Interest is believed to possess a cognitive and affective component (Hidi & Harackiewicz, 2000). Most research designs incorporating an assessment of situational interest focus on the affective component with items asking participants to rate the degree to which the course sessions are personally interesting or enjoyable (Renninger & Hidi, 2011). Although personal and situational interest is conceptually distinct, there has been a scarcity of measures to assess the degree to which the learning environment activates students' situational interest (Linnenbrink-Garcia et al., 2010).

The course situational interest measure developed in the present research does not ask students' for their personal beliefs regarding the course, rather asks them to report on the degree to which other students are interested and attentive during course sessions. Framing items in this manner is preferable because while a student may find a course personally interesting, he/she may notice that many other students are not interested and engaged in non-course activities. In this scenario, it is hoped that the participant would reflect upon the actions of his/her peers and indicate poor course situational interest.

One notable contribution from the present research is an inclusion of items asking participants the degree to which students' are focused on course activities, emphasis on affective reaction to the context, and no reference to personal interest or value. Second, unlike most research centered upon student interest, the present study assessed both situational interest and personal interest within the same research. Researchers have argued for the importance of situational interest when students do not possess personal interest (Ainley et al., 2002). Hidi and Renninger (2006) proposed a four-phase model of interest development where situational interest is externally supported by the context and/or others and serves to support individual (personal) interest development. Schraw

and Lehman (2001) suggest that more research is needed on the transition from situational interest to personal interest. The present study provides correlational data that suggests course situational interest is positively related to personal interest. However, a causal chain cannot be inferred from this correlational data.

**Academic press.** Academic press was a salient and distinct factor of a college course climate. This aspect of a learning climate has been explored with younger students (Middleton & Midgley, 2002). There is a scarcity of research on this aspect of a college climate. The present study extends knowledge about how college students perceive academic press. Participants who rated these items highly believed that students in the course were expected to learn course material well and complete challenging assignments. It is important to note that there may be research that has emphasized the importance of this aspect of the learning environment, but has done so using a different label.

Challenge may be synonymous with academic press. Previous research has found that learning climates that provide students with challenging instruction and positive affective support can serve to promote motivation for younger students (Fast et al., 2010; Schweinle et al., 2006; Turner & Meyer, 2004). Academic press forming a distinct dimension of the climate supports the findings from Gentry and Springer (2002) where challenge was one of the four dimensions found in their construction of a scale for use with secondary students. The researchers acknowledged that providing students with challenging activities was important for all students, but particularly for gifted and talented students. It is important to consider the delicate nature of balancing challenge with skill; challenges that exceed students' ability can undermine motivation by

increasing anxiety and by reducing feelings of competence (Schweinle et al., 2006). The level of challenge or press for understanding should be accomplished when a reasonable amount of effort is exerted.

One noteworthy result different from previous research based upon the EFA results was that one item anticipated to load onto the autonomy support factor, “The instructor encourages students to ask questions”, one of the items taken from the autonomy support scale from the Learning Climate Questionnaire (Williams & Deci, 1996), equally cross-loaded onto the academic press factor. Research that has used this subscale has not explored the factor structure of this measurement tool, nor has it explored it with items assessing other aspects of the climate. A decision was made to keep it with the academic press factor rather than the autonomy support factor, because an instructor perceived as possessing high student expectations would hold students responsible for their learning by asking questions.

Participants’ perception that students are pressed to display their understanding and are challenged has been viewed as an important aspect of the learning climate (Blumenfeld, 1992). Turner and Meyer (2004) claim that how students respond to challenge depends on the instructional interactions with others, not only on the person or task itself. The findings from the present study are noteworthy in that academic press or challenging students to be accountable in demonstrating their understanding were examined in conjunction to their perceptions regarding other aspects of the learning environment.

**Instructor organization.** Instructor organization was defined as the degree to which students perceive the instructor as being prepared by organizing course activities

and assignments well. Students who highly rated this aspect of the climate believed the instructor was organized in leading course sessions and provided clear directions for completing assignments.

Perceived instructor organization is an aspect of the course climate that has largely been unexplored in most motivational research. Theories of motivation have not specifically identified organization as an important dimension of the learning context, however this aspect has been explored in classroom climate research (Dorman & Fraser, 2009) and in higher education persistence research (Pascarella et al., 2008). Pascarella et al. examined the degree to which exposure to organized and clear instruction during the first year at the university was related to reenrollment at that institution for the second year of college. In that persistence research, organization and reenrollment was mediated by satisfaction with the education one was receiving. The researchers claimed that effective classroom instruction has implications beyond the knowledge acquisition in specific courses, but also the intention to persist at the university. Findings for the benefits of organized college instruction were also found by Freeman et al. (2007) who reported that students' perceptions of their instructor preparedness for class activities was related to adaptive motivation and achievement.

Instructor organization was an important aspect of a course's climate as perceived by students. The present findings advance the work within motivation because this aspect of the learning environment has been largely unexplored within motivation research. The relation to other aspects of a course's climate, relations to motivational beliefs, and self-reported grade suggest that this aspect of the climate should continue to be explored.

**Energy.** One unanticipated EFA finding was the emergence of the energy factor. Energy defined in the present research is students' perceptions that others in the course put forth energy and work hard. One important distinction to make is that participants were not asked about the degree to which they put forth energy in the course, rather their perceptions of how much energy is put forth by others students in the course. It is unclear whether students' discuss their study habits, the amount of time spent on completing course activities, or discussions about others work products. Energy was positively related to student relatedness, so it may be that students do discuss their level of effort to complete course tasks.

Throughout the various EFA solutions this factor emerged containing the following three items: Students in this course treat one another fairly; Students work hard to complete course requirements; and Most students put forth a great deal of energy and time for this course. Because of the emergence of this factor throughout various EFA solutions, a decision was made to keep this factor. Upon further inspection of these items, a decision was made to exclude the first item from the remainder of the analyses because of its focus on treating one another equitably. One key finding from the present study is that energy should be an aspect of the learning context that warrants further exploration. A comparison of the items loadings on the academic press factor and the energy factor revealed that perceptions of being held to high learning and performance expectations (academic press) is related to but distinct, from the perception that other students work hard and put forth energy for course. Future research should continue to explore this distinction further and what activities/interactions during in the course serve to mold students' perceptions regarding the level of energy exerted by their peers.



**Equity.** Equity was a dimension of a college course's climate as perceived by students. Equity was defined as the extent to which students' perceive that the instructor treats students equally. Equity defined in the present study is similar to how it has been defined in previous classroom climate research, specifically with Dorman's research using secondary samples (Dorman, 2001; Dorman & Adams, 2004; Dorman & Fraser, 2009). Discussion of the similarities and differences to previous research is difficult to make for equity because there is not a lot of motivation research on how college students perceive this aspect of a course climate. One prior study at the college level found that when faculty was perceived as being fair and unbiased, it was an important aspect of institutional effectiveness (Elliott, 2003). Therefore, the research using secondary samples and the present study suggest that equity is an aspect of the learning climate that can and should be assessed. Students' perceptions regarding the degree to which all students are treated fairly has been an underexplored aspect of a course climate in motivational research.

A notable distinction and importance of the present study is that unlike previous motivation research assessing aspects of the learning environment, all items in the present study were framed from a climate perspective. Participants were asked to reflect on how they perceived other members in the course, rather than their own personal perspective about the target course. For example, all items were framed as "students in this course believe" as opposed to "I believe", closely align to how the term "climate" is defined. While it is natural for participants to reflect upon their own beliefs and perspectives about the course, asking them to specifically respond based upon their perceptions regarding

the behaviors and thoughts of other students and the instructor allows for the assessment of the climate.

### **Course Climate Predicting Students' Motivational Beliefs and Self-Reported Course Grade**

Students' perceptions of a course's climate can predict their personal motivational beliefs and grade for that course. Patterns of regression findings indicate that aspects of the course climate could predict motivational beliefs and self-reported course grade in unique patterns. Additionally, many of the relations between course climate subscales (8 features of the course climate) and outcome variables (motivational beliefs and self-reported grade) provide support for the construct validity of this instrument as assessing motivationally relevant aspects of a course's climate. The following sections will provide novel evidence linking perceptions of a course's climate to specific motivational beliefs for that course.

**Autonomy support.** An important finding from the present study was that autonomy support predicted six of the eight motivational beliefs when entered during step one of the regressions. However, once the additional course climate variables were entered on the second step, autonomy support was no longer a significant individual predictor. Autonomy support does not contribute a significant amount of unique variance when other aspects of the climate are entered into the regression model. This finding was unexpected because it was hypothesized that autonomy support would be a significant positive predictor for adaptive motivational beliefs. This finding indicates that when students perceive their instructor as nurturing their needs and preferences during instruction and taking a personal interest in students, students are likely to feel confident

in their ability to learn course material, hold positive views regarding the importance of course content, feel that the course is valuable to meet future goals, find content personally interesting, and adopt a mastery oriented achievement goals. Participants, who reported a high level of autonomy support, reported feeling less anxiety for the course. In terms of grade, step one results indicate autonomy support (as the only climate predictor) can predict self-reported grade in the present research.

The results of step one regressions fit with research indicating that perceived autonomy support in an instructional context is adaptive for college student motivational beliefs (Black & Deci, 2000; Garcia & Pintrich, 1996; Reeve & Jang, 2006; Williams & Deci, 1996). Black and Deci (2000) found that college students' perceptions of autonomy support predicted increases in autonomous self-regulation, perceived competence, personal interest/enjoyment, and decreased anxiety over a semester. Additionally, students who perceived the instructor as more autonomy-supportive performed better in the course in terms of final course grade. Garcia and Pintrich (1996) also found that higher perceived autonomy support was positively related to motivational beliefs such as intrinsic motivation, task value, and self-efficacy. Self-reported grade was positively related to autonomy support, which was contradictory to the results found by Garcia and Pintrich where autonomy support was not related to final course grade. One possible explanation for the contradictory results for course grade could be the difference in the assessment of autonomy support and grade. Autonomy support assessed in their research was narrowly defined as decision-making opportunities, whereas the assessment of autonomy support in the present research included both social and academic supports. In terms of grade, it is plausible that results differed because in the present study students

self-reported course grade mid to late in the semester, whereas Garcia and Pintrich obtained the official final course grade.

One substantial and surprising finding was that when the regression equation included more aspects of the course climate, autonomy support was no longer a significant individual predictor. This was an unanticipated finding because prior research with college students (Garcia & Pintrich, 1996) and research with younger samples (Reeve et al. 2004; Reeve, 2006; Shih, 2008) have found positive relations between autonomy-supportive instructional practices and adaptive motivational beliefs. However, in these previous studies, perceived autonomy support was the only aspect of the learning environment assessed.

When seven other aspects of the course climate were included in the regression models, some of the other aspects of the climate became significant predictors and autonomy support became non-significant. This finding is critical, as it provides some justification why assessing multiple facets of the learning environment is important. When autonomy support was used as the sole predictor of the outcome variables, significant relations were found generally similar to previous findings. However, inclusion of perceptions regarding other facets of the climate in the regression equations indicated that autonomy support did not significantly account for unique variance in the dependent variables. Autonomy support was positively correlated with six other aspects of the climate. It is possible that autonomy support does not account for a significant amount of unique variance because the variance accounted for is shared with other climate predictors.

**Performance avoidance goal structure.** Results support the assessment of a perceived performance avoidance goal structure. These results are important because this aspect of a course's climate was related to students' motivational beliefs. In prior motivation research, measures of performance goal structures generally have only included perceptions of a performance approach goal structure, but not a performance avoidance goal structure. The scarcity of published studies using a college sample with an assessment of a performance avoidance goal structure makes the present study a valuable contribution to motivation research. There is ample research to suggest that students' perceptions of classroom goals are related to students' personal achievement goals (Meece et al., 2006; Wolters, 2004; Young, 1997). For example, in one of the few research designs to include a performance avoidance goal structure Karabenick (2004) found perceptions of a performance avoidance goal structure was related to both personal performance achievement goals. Similarly, the results from the present study suggest that a perception of a performance avoidance goal structure is positively related to adoption of both performance approach and avoidance personal achievement goals. While Karabenick found no relation between perception of a performance avoidance goal structure and mastery approach personal goal adoption, findings from the present study found them to be negatively correlated. Students who are more likely to perceive performance avoidance goals emphasized in the course were less likely to report pursuing mastery oriented goals in that class.

Karabenick (2004) found that college students' perception of a performance avoidance goal structure was maladaptive because students were more likely to avoid seeking help. The present results provide further evidence supporting the conclusion that

perceptions of a performance avoidance goal structure is detrimental for college students. Students who perceived that other students in that course were focused on wanting to avoid performing poorly compared to others were less inclined to feel efficacious for learning course content, reported less utility value, reported greater anxiety, were more likely to personally adopt performance approach and performance avoidance achievement goals. Non-significant regression findings were that a performance avoidance goal structure could not significantly predict students' attainment value, personal interest, mastery approach goals, or self-reported course grade. Perceptions of a course's climate that emphasized a performance avoidance goal structure was not related to adaptive motivational beliefs nor self-reported grade. The present research extends the understanding of performance avoidance goal structures as perceived by college students by extending the findings to a greater array of motivational beliefs.

**Student relatedness.** It was hypothesized that positive social relations among peers in a course may serve as a motivational resource. A sense of relatedness is theorized to be a basic need that should be met in an environment to support personal well-being and motivation from a self-determination theory perspective (Ryan & Deci, 2000). One surprising pattern of finding was that student relatedness did not individually significantly predict any motivational beliefs. While student relatedness was included along with other perceived course climate predictors to broadly predict motivational beliefs, the relative contribution of student relatedness was non-significant when all other predictors are statistically controlled. One reason for this lack of relations in the multivariate regressions may be the type of relationship a student forms with another could be related to motivation in different ways. The nature of relationships assessed in

this study emphasized getting to know one another and forming friendships. It may be that peer social relations geared for friendships may not be as important as perceiving students provide one another with academic support. Additionally, there may be developmental differences between first-year college students and students with more college experience who are enrolled in upper level courses. It is plausible that students with more college experience may not find as important for peers to meet social needs in a course. Rather, they might find peers to be a more valuable resource for assistance with course related activities serving as an academic resource.

Previous research has suggested the importance of social and academic integration at a university (Tinto, 1975, 2006). Therefore, it was hypothesized that students' perceptions that positive social relations would be related to positive motivational beliefs. Previous research on college samples have found important positive outcomes for students who feel connected to their peers. In a study of college students' sense of belonging, Hausmann et al. (2007) found that early college social experiences were related to students' sense of belonging to the university more broadly. In an investigation at the course level, Freeman et al. (2007) found first semester college students' subjective sense of belonging in a class was positively associated with self-efficacy, intrinsic motivation, and perceptions of value of academic tasks for that class. A sample item from the class belonging scale was "I feel like a real part of this class". Two important distinctions between the results of this study to previous findings are: (1) this study used a sample of upper level college students instead of first semester college students and (2) assessment of this aspect of a course's climate was not the same. A sense of belonging to a course and perceiving a sense that students form friendships with

one another are related because of an emphasis on social relationships, but they may be assessing different constructs. Student relatedness in the present research clearly identifies the relations with peers, whereas previous findings on belongingness more broadly could also include students' perceptions of their relationship with the instructor.

Although student relatedness did not individually predict motivational beliefs or self-reported grade, its correlation to two achievement goals is noteworthy. Bivariate correlations revealed that student relatedness was positively related to mastery approach goal adoption and to performance avoidance goal adoption. These findings suggest perceptions of student relatedness are related to some of the personal achievement goals students adopt in that course. It is plausible that an environment where students interact and form friendships with one another may be one where students can communicate their personal achievement goals to each other. It is also plausible that students' selection of friends in the course may serve to amplify positive or negative behaviors over time (Juvonen, 2007). Therefore, it is important to keep in mind that students' select individuals who they prefer to interact with. These selected peers are in the position to model their beliefs and behaviors to others.

**Course situational interest.** Findings from the present study provide support for the positive relation between course situational interest to adaptive outcomes. Situational interest has been viewed as a critically important construct because of focus on environmental stimuli, which can be manipulated and therefore more amenable for educators to control (Rotgans & Schmidt, 2011a). While situational interest is theorized to lead to a more stable personal interest, more research is needed to assess situational interest in actual classroom settings (Linnenbrink-Garcia et al., 2010). Activities



occurring in the learning environment such as demonstrations, storytelling, video clips, group discussions may serve to trigger situational interest or contribute to its demise (Barron & Hulleman, 2006; Rotgans & Schmidt, 2011b). While this investigation did not focus on which specific instructional techniques were related to situational interest, a notable research contribution made was the clear assessment distinction between situational interest and personal interest. Course situational interest was found to be a significant individual predictor of personal interest. Additionally, other adaptive relations were found to situational interest. Participants who rated other students in the course as being interested during course sessions were more likely to report higher self-efficacy, adopt mastery approach achievement goals, and self-report a higher course grade. Findings from this study support those found by Harackiewicz et al. (1997, 2000, 2002) that interest was related to mastery approach goal adoption and final college course grade.

Additionally, students who rated course situational interest high were less likely to report experiencing anxiety when thinking about the course. Findings from the present study support the adaptive nature of a learning context where students' interest is triggered. A previous study focusing on motivational engagement outcomes, found that college students who rated the course as being interesting, reported greater satisfaction with choosing that course, reported being effortful for the course, and would persist on course tasks once begun (Arroyo-Giner et al., 2010).

Students' perceptions of a course's level of situational interest did not individually predict attainment value, utility value, performance approach goal, or performance avoidance goal adoption for that course. However, examination of

correlations suggests that both course situational interest and personal interest were related positively to both attainment value and utility value. The positive relation to both forms of value is worth noting because value has been viewed to be an important component for interest development (Renninger & Hidi, 2011).

**Academic press.** The present study indicates that students who perceive a course as rigorous in terms of learning expectations are more inclined to possess higher attainment value and report mastery approach achievement goals in that course. The more a student perceives a course's climate as one with rigorous expectations, the more that student is likely to believe doing well in that course is important. Additionally, the student is more likely to adopt achievement goals to learn that course's material as much as possible. However, perceptions of higher academic press individually predicted students reporting higher levels of anxiety when thinking about the course. It is plausible that perceiving a course's climate as one in which high learning standards are expected may illicit anxiety because students may reflect upon a discrepancy between their level of competence and/or the level of effort required to meet the rigorous learning expectations is more than the student is willing to expend. Examination of the correlation between academic press and anxiety revealed an inverse and weak relation (non-significant), but the beta weight of academic press on anxiety was significantly positive revealing that academic press served as a suppressor variable (Kline, 2010). The suppression occurred because while academic press and anxiety were seemingly not related based on the correlation alone, the ability of academic press to serve as an individual predictor of anxiety (holding other climate variables constant) greatly increased.

Academic press did not individually predict self-efficacy, utility value, personal interest, performance approach goals, performance avoidance achievement goal adoption, or self-reported course grade in the multivariate regressions. Although academic press did not individually predict self-efficacy, the bivariate correlation suggests that academic press is positively related to self-efficacy. The correlational finding lends support to the Middleton and Midgley's (2002) study, using an eighth grade sample, which found that academic press was positively related to adaptive learning behaviors and beliefs (self-regulation and self-efficacy). Middleton and Midgley claimed, "...questioning at a deeper level, asking for justification, and expecting effortful activity and thoughtful engagement are associated with positive beliefs and behaviors in students (p. 386). Other support for the benefits of perceiving rigorous learning expectations in a learning environment was found by Arroyo-Giner et al. (2010) who found that college students who perceived their course as challenging reported being more effortful, would not give up easily once started on a course task, and indicated a greater intention to persist at the university. Academic press in the Arroyo-Giner et al. study emphasized the nature of performance expectations, as opposed to expectations for learning as assessed in the present research.

**Instructor organization.** Students who rated their instructor as organized reported greater self-efficacy, attainment value, utility value, personal interest, adoption of mastery goals, and self-reported a higher course grade. Additionally, the more students' perceived the instructor to be organized, the less likely they reported feeling anxious. A notable finding from this study is the fact that the one aspect of a course's climate that clearly is related to all adaptive motivational beliefs, positively related to

self-reported course grade, and negatively related to anxiety is instructor organization. Students who perceived a course's instructor organizes course sessions and assignments well are more likely to report feeling confident in doing excellent in the course, find the course content to be personally meaningful, believe that course content to be important for their future aspirations, find the material personally interesting, and adopt goals to learn the material well. These students are more likely to obtain a higher course grade and feel less anxious regarding the course.

The adaptive outcomes reported by students who perceive the course instructor as well organized provide some evidence regarding the importance of assessing this aspect of a learning climate as important. While there is a scarce amount of motivational research that includes instructor organization within the research design at a college level, the findings of the present study are consistent with previous research. Freeman et al. (2007) found that college students' perception of instructor organization was related to self-efficacy, intrinsic motivation, and task value. In a previous study with a college sample, students who rated their instructor as more organized and supportive rated greater satisfaction with selecting the course and reported greater intention to graduate from the university (Arroyo-Giner et al., 2010). Fraser and Treagust (1986) found that college students' perceptions of organization, referred to as task orientation, were positively associated with student satisfaction with the course. Although not directly related to similar outcome variables assessed in the present research, Pulvers and Diekhoff (1999) found that students who had self-reported cheating in a specific college course rated class activities as less organized in comparison to their non-cheating peers. The findings from the present study suggest perceptions of a clear and organized

instructor is related to adaptive student motivational beliefs, and the findings from Pulvers and Diekhoff (1999) suggest it may also influence actual behaviors within that course. Findings from the present study add to the literature identifying instructor organization as an important and beneficial dimension of the learning environment.

**Energy.** Energy was an individual positive predictor of anxiety and mastery approach goals and a negative predictor of self-efficacy and self-reported grade. Students who perceive others in a course as putting forth energy to complete activities for that class are more likely to personally feel anxious regarding that course, and more likely to adopt goals for learning course material thoroughly. Energy negatively predicted self-efficacy suggesting that the more students perceived others put forth a lot of effort for the course, the less self-efficacious they felt. They were also more inclined to anticipate receiving a lower grade in the course. Students' perceptions of the amount of attention, persistence, and effort others devote to completing course activities is related to their own motivational beliefs and self-reported grade. It may be that perceiving others as having to exert a high level of high effort can be threatening to students' perceived ability beliefs (Bandura, 1993). The results from the present study do provide some support that self-efficacy and performance are shaped by vicarious experiences, specifically the observation of their peers' level of effort (Schunk, 1991).

Energy serving to be an individual predictor for anxiety, self-efficacy, and self-reported grade was surprising considering that the bivariate correlations to those variables were not significant. Kline (2010) claims that suppression is demonstrated when the value of a predictor's beta weight is greater than its bivariate correlation or when the two have different signs. Low bivariate correlations can mask true predictive relations once

other variables are controlled for, as in the case of the beta weights in regressions. While energy was weakly correlated to anxiety, self-efficacy, and self-reported grade, once it was entered into the regression equations along with other course climate predictors the predictive power of energy was enhanced (Meyers et al., 2006). Non-significant regression findings between energy and attainment value, utility value, personal interest, performance approach goal, and performance avoidance goal adoption were found in line with the correlations. While energy was positively correlated with value and interest positively, energy was not a substantial individual predictor of these outcomes.

Academic press and energy were features of the climate that were positively correlated and both emphasized students' beliefs/behaviors for the course. While academic press and energy were both able to positively predict anxiety and mastery approach goals, different patterns emerged for self-efficacy, attainment value, and self-reported course grade. Unlike academic press, energy could negatively predict self-efficacy and course grade. This finding indicates that perceiving rigorous learning expectations did not predict students' confidence judgments or self-reported grades, but students' perceptions that other students engaged in effortful behaviors could in an inverse direction.

Energy comprised of two items ("Student work hard to complete course requirements" and "Most students put forth a great deal of energy and time for this course") may be conceptually distinct from items assessing academic press such as "In this course, the instructor gives work that make students really think". The findings from this research support Middleton and Midgley's (2002) claim that students may engage in

academic tasks to improve and develop their confidence, which may be positively related to but distinct from perceiving that the teacher urges them to work thoughtfully.

Another important distinction to note is that academic press, but not energy, could positively predict students' attainment value for the course. This noteworthy result suggests that students' perceptions of being held to rigorous expectations could positively predict their perceptions that it was important to learn course material well; but the perceptions that other students in that course were effortful in that course did not lead to a perception that it was important to learn course material well. The similar and distinct relations found with energy and academic press to motivational beliefs and self-reported grade provide justification for keeping those two dimensions of a college course climate separate.

The suppression effects found suggests that students' perceptions of energy in a course have complex and profound relations to certain motivational beliefs and course grade. To this researcher's knowledge, there are no other published research studies that have assessed this dimension of a college course climate. It is therefore difficult to make any direct comparisons to any prior findings. It may be that other lines of research have used a different label for a similar construct.

**Equity.** Students who perceive that other course members treat one another fairly reported greater attainment value, less anxiety, and negatively predicted grade for that course. Equity serving to be an important negative predictor of self-reported grade was surprising. Students who perceived equitable treatment of others in the course were more inclined to report a lower course grade contradicted expectations that equity would be related to adaptive student outcomes. Examination of the bivariate correlation compared

to the beta weight suggested that suppression played a role in equity's increased predictive power in the regression equation where self-reported grade served as the dependent variable (Kline, 2010).

Students' perceptions of equity did not significantly predict self-efficacy, utility value, personal interest, mastery approach goals, performance approach goals, or performance avoidance goals. These results are inconsistent with previous findings suggesting the motivational benefits of course climates where students are treated fairly are related to positive student outcomes. For example, Dorman and Adams (2004) using a sample of Australian and British secondary students' perceptions that classmates were treated equally positively predicted academic efficacy. College students who perceive that members of the course were treated fairly by one another were more likely to report greater effort, persistence on course tasks, and were more likely to persist at the university (Arroyo-Giner et al., 2010).

It should be noted, that while equity was not a significant individual predictor of self-efficacy, the correlation between the two was positive. It is plausible that with the inclusion of other motivationally relevant aspects of the course climate included in the regressions, the variance explained by equity was shared with other variables therefore limiting its ability to be an influential individual predictor. Research within the self-determination theory suggests that one of the three basic psychological needs is relatedness. Deficits in relatedness may lead to psychological and physical problems (Klassen et al., 2012). It seems plausible that when a student believes he/she is being treated unfairly or that other students are being unjustly treated will not have their needs of relatedness met leading to poor well-being and lowered motivation. The findings from



this study support the contention that perceptions of equitable treatment of students can negatively predict a maladaptive student outcome, namely anxiety. However, other findings suggest that equity does not significantly predict any of the adaptive motivational beliefs such as self-efficacy, utility value, personal interest, or mastery approach goals. The only positive relation was found with attainment value indicating that in a course where students believe everyone is treated fairly, they are more likely to believe that it is important to learn material well in that course.

Boysen (2012) cautions that college campuses are increasingly becoming more diverse, which can lead to students facing more frequent encounters of prejudice, discrimination, and stereotypes in the classroom. He suggests that course instructors have a responsibility to ensure a safe learning environment for all students by responding to bias when it occurs in the classroom. However, bias may be subtle in nature making overt identification of specific differential treatment of others difficult. Allan and Madden (2006) claim that “chilly climates” defined as classroom practices that may disadvantage women and other groups may go unacknowledged because they reflect socially accepted patterns of communication. For example, a student behavior that may occur in a course setting is encouraging men more than women. The present research did not assess specific behaviors within a course setting, however may be better suited for the assessment of more overt forms of discrimination.

Some surprising results were the suppressor effects occurring in the prediction of three outcome variables. Suppressor effects were found in the prediction of self-efficacy, self-reported grade, and anxiety. A surprising finding was that energy, although weakly related to self-efficacy, was a significant negative individual predictor of self-efficacy.

When the other climate predictors were held constant the contribution of energy for predicting self-efficacy was significant. Participants rating the amount of effort students put forth in the course as low were more likely to report their own self-efficacy as high. It is plausible that participants may have felt that their peers did not have put a lot of effort into the course, so were confident in their ability to learn course material well.

A suppressor effect occurred in the prediction of students' self-reported grade. While energy and equity were both weakly correlated to self-reported grade, the beta weights for both predictors were significant. This finding indicates that when all other course climate predictors are held constant the relative contribution of energy to prediction of self-reported grade is significant. This result indicates that when participants perceived other students putting forth a lot of energy for the course, the more likely they reported anticipating a lower course grade. The same pattern of results was found with equity as a predictor. When all other climate predictors were held constant, equity was a negative individual predictor grade. This finding suggests that when participants perceive that course members are treated equally, the more likely they reported anticipating a lower grade in that course.

A suppression effect also occurred in the prediction of anxiety. While both academic press and energy were only weakly correlated to anxiety, the beta weights were greater than anticipated. This finding indicates that when all other climate predictors are held constant, the more students perceive the climate as pressing students to learn course material well, the more they are likely to rate experiencing anxiety when thinking about the course. A similar pattern occurred for the prediction of anxiety from energy when all other climate predictors were held constant. This finding suggests that when participants

perceive their peers as putting a lot of effort and energy into the course, the more likely they were to report feeling anxious about that course.

### **Limitations**

Assessment of the learning context has been an important research interest (Patrick & Ryan, 2005; Roeser, Midgley, & Urdan, 1996; Urdan, 2004; Urdan & Schoenfelder, 2006; Wolters, 2004). Most researchers have used constructs based on the theoretical lenses in which the research is conducted. There is a need to integrate theoretical perspectives to enhance our understanding of positive learning environments (Hulleman et al., 2008; Patrick et al., 2011). This study provides an initial attempt to assess multiple motivationally relevant aspects of a college course climate. However, there are some important limitations to be considered.

In terms of the research design, an important limitation to consider is the sample. Participants were recruited from psychology courses instructed in a face-to-face format in an ethnically diverse urban university. The sample was comprised of more females than males. Caution is needed in generalizing results to other populations such as typical first year courses, non-psychological courses, larger lecture courses, or use with students who have more specific academic and/or social needs. In terms of the research procedures, other limitations include participants self-reporting their own perceptions of a course's climate, objective measures of the course was not assessed. Also, participants reported the grade that was anticipated. It would have been preferable to collect students' actual grade in the course.

One significant analytical limitation is that the data are correlational. The causal relationships between course climate perceptions and motivational beliefs cannot be

made. This research did not address students' prior educational experiences or pre-existing motivational beliefs, both of which may influence the subjective perceptions of a course's climate. Although the newly created survey does have the advantage of being multi-dimensional it also has limitations. Ideally, the number of cross-loaded items would have been minimal and pattern item loadings could have been stronger (i.e. greater than .70) (Costello & Osborne, 2005). Caution should be used when interpreting results until more research on the psychometric properties of this instrument are available. The limitations of this research study do indicate a strong need for further research.

### **Implications for Practice**

An important implication for practice based on the findings from the present research is that asking students to report on their perceptions of a college course is a worthwhile endeavor. A multi-theoretical approach led to a creation of an instrument for use with college students containing subscales that were found related to students' motivation in different ways. Assessment of perceptions of a course's climate was a fruitful endeavor because the perceptions of the learning context were related to the participant's motivational beliefs for that course. University administrators and scholars may use this instrument to address their own research and/or program evaluation where assessment of the motivational climate is needed. Second, findings from this study may be used to enhance instructional practices to facilitate adaptive motivational beliefs for that course (Van Nuland, Dusseldorp, Martens, & Boekaerts, 2010).

University instructors may not have influence over students' personal factors. However, as instructional leaders, they may exert influence over contextual features of a course (Lyke & Young, 2006). Unlike students' individual differences, the learning

environment is viewed as something that can be manipulated by the instructor (Gettinger et al., 2011). Findings from the present study indicate that aspects of a course's climate can be assessed and that students' perceptions of those aspects are related to motivational beliefs and self-reported grade in that course. One clear implication for practice is that instructors can strive to lead their courses to create a motivationally optimal learning environment for college students.

One aspect of the course, instructor organization, was found to be the most influential aspect related to adaptive student motivational beliefs and self-reported grade. Targeted interventions at the university could seek to assist professors with developing organized syllabi containing a sequence of course activities and assignments. This organization from the instructor may help students understand the curriculum to be covered and the method for which they will need to demonstrate their understanding of course material. Organization such as this may help students understand and meet the course's learning objectives. In a similar manner, other aspects of a course could be targeted for an increase or decrease. Targeted interventions such as these may make more of an impact on courses that have usually high withdrawal rates.

### **Future Research Directions**

The findings from this study serve to support the need for scholars to broaden their theoretical lenses by calling attention to the importance of conducting research that incorporates assessment measures from multiple lines of research inquiry. Researchers from distinct lines of perspectives may find these results informative for their own work. One direction for future research is to examine different college populations. Future work should examine other higher education learning environments. For example,

community colleges offer flexibility for some students because of the generally lower costs, and greater variety of vocational certification and academic programs offered (Porchea, Allen, Robbins, & Phelps, 2010). Additionally, with the increasingly popular mode of online or hybrid courses, the assessment of the perceptions of these different types of learning environments is urgently needed.

Future research should attempt to examine students' perceptions of a course's climate, motivational beliefs for that course, and other learning outcomes for that course such as actual course grade, future course selections, use of learning strategies, and other behavioral and/or performance measures. Research that incorporates more objective behavioral and/or performance measures may provide a more complete model of the relations among the environment, personal beliefs, and behaviors in regards to learning and/or performance.

Evaluating the relations between the environment, personal beliefs, and behaviors may be especially important for domains and/or courses that have the greatest number of student withdrawals and/or low academic achievement. Higher education persistence researchers may find the findings from the present research as a basis for identifying course specific aspects that may be associated with college student dropout, poor academic achievement, and/or poor student motivation. A research design that is needed is one that explores if personal motivational beliefs mediate the relationship between perceptions of a course climate and learning outcomes (Bong, 2008; Roeser et al., 1996).

Research incorporating qualitative methods such as observations and interviews are needed. Qualitative research methods could be utilized to reveal the kinds of instructional practices and student interactions that serve to make the distinct course

climate dimensions salient to students. Additionally, it would be interesting to conduct a study in which students' subjective perceptions of a course are more generally aligned to objective features of the environment. This kind of research would be especially beneficial for understanding what specific activities/interactions that happen within a course serve to shape climate perceptions.

Some of the climate dimensions in need of more investigations include student relatedness, academic press, energy, and autonomy support. In terms of assessing the social climate, future work should address whether or not asking upper level college students regarding social relations in that course is as important as asking first year college students. This research study assessed only social supports in a college course, not overall social supports at university wide level such as having friends on campus. Additionally, future research should address instructional practices that facilitate and encourage peers to function as social and academic support within a class and also more broadly at the university level. These two types of supports should be examined throughout students' progression in college.

Future research should explore the degree to which academic press can serve to increase adaptive motivational beliefs and engagement, but yet do not overwhelm students with anxiety. It is plausible that too much can serve to promote anxiety, yet too little press will allow students to be less engaged. Future research should also explore the effects of academic press in regards to courses with high withdrawal rates and/or low student performance. It may be beneficial for university educators to consider whether or not expectations for learning are consistent across academic domains. Ideally, the learning expectations should be ones that can be reached with effort, but do not overly

frustrate students. Additionally, future research should continue to examine the degree to which academic press and energy although conceptually related, lead to different patterns of findings.

Last, a noteworthy finding of this study was that autonomy support was not an individual significant predictor of any motivational belief or self-reported grade when entered into the regression equation along with other motivationally relevant aspects of a course climate. Future research focused on autonomy support should assess more aspects of the learning environment. The findings from this study indicate that while instructors should strive to be autonomy-supportive, there are other aspects of a course's climate that may be more influential on students' motivational beliefs and self-reported grade. The inclusion of other aspects of the climate significantly improved the prediction of all outcome variables. These findings suggest that assessing a wider array of climate aspects is preferable to just the assessment of one.

Research taking into account a wider array of aspects of the learning climate will provide a more complete understanding of students' motivation, learning, and performance. This is important for researchers and practitioners seeking to increase motivationally relevant aspects of a course climate.



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## **Appendix A**

### **Demographics and Course Information**

**Demographics**

Before starting the actual survey, I would like to get some basic information about you. Please complete the following:

What is your age in years on March 1, 2012?

-[open text box]

Which of the following best describes your current academic standing at the university?

- Freshman
- Sophomore
- Junior
- Senior
- Post-Baccalaureate

What is your sex?

- Male
- Female

Which of the following best describe your race/ethnicity? (check all that apply)

- Asian/Asian American
- Black/African-American
- Caucasian/White
- Hispanic/Latino(a)
- Native American/American Indian
- Other [open text box]

Including Spring 2012, how many semesters have you attended the university?

- 1 to 3 semesters
- 4 to 6 semesters
- 7 to 9 semesters
- 10 to 12 semesters
- 13 or more semesters

As the end of the Fall 2011 semester, what is your university cumulative GPA?

- 3.5 or greater
- 3.0 – 3.4
- 2.5 – 2.9
- 2.4 – 2.0
- 1.9 or less

## Course Information

This survey is designed to get information about the course from which you were recruited to participate. Please think about or refer to the same specific course throughout all of the survey. This course is referred to as your “target” course or just “this course”.

To get started, please identify the specific course you will use as your target course. Please choose from the drop down menu the name of your target course.

How many students do you estimate are enrolled in the target course?

- Less than 25
- 26-50
- 51-75
- More than 76

Does your target course also have a smaller group session that you attend?

- Yes
- No

What grade do you anticipate receiving for this course?

- A
- A-
- B+
- B
- B-
- C+
- C
- C-
- D+
- D
- D-
- F

## **Appendix B**

### **Classroom Climate Items**

The items on this section of the survey ask you to indicate what your target course is like by reporting on the behaviors, experiences, beliefs, and attitudes of the students in this course. Respond to the items by thinking about the course, the instructor or students in general, not just about your own personal beliefs. Also, answer all the items by thinking about the target course you indicated earlier and not by thinking about any other course.

Please answer the following items from a scale of Strongly Disagree - Strongly Agree.

**Instructor Organization – 5 items**

1. Students believe this is a well-organized course. <sup>A</sup>
2. In this course, assignments are clear for students to understand.
3. Students have a clear idea of what will get covered in each course session. <sup>B</sup>
4. In this course, activities are carefully planned. <sup>C</sup>
5. The instructor seems unprepared for this course. (R)

**Instructor Support – 4 items**

1. The instructor is respectful toward students. <sup>D</sup>
2. The instructor takes a personal interest in students. <sup>A</sup>
3. The instructor makes an effort to get to know students.
4. The instructor for this course encourages students to try their best.

**Course Situational Interest – 5 items**

1. Students believe the instructor's teaching style makes this course enjoyable.
2. Students look forward to coming to class. <sup>E</sup>
3. During course time, students often engage in non-class activities (internet, chatting with others, etc.). (R)
4. Course time is boring. <sup>E</sup> (R)
5. During course time, students are not engaged in what the teacher wants them to be doing. (R)

**Student Relatedness – 4 items**

1. Students get a chance to get to know other students in the class. <sup>E</sup>
2. In this course, students form friendships with one another.
3. Members of this course are interested in getting to know one another. <sup>E</sup>
4. Students in this course are helpful to each other.

**Academic Press – 7 items**

1. In this course, the instructor allows students to get away with doing easy work. (R)<sup>F</sup>
2. In this course, the instructor presses students to do thoughtful work.<sup>F</sup>
3. In this course, the instructor gives work that makes students really think.<sup>F</sup>
4. The instructor evaluates assignments very critically.
5. Students put forth a great deal of energy and time for this course.
6. Students work hard to complete course requirements.
7. The instructor expects students to complete challenging assignments.

**Autonomy Support – 5 items**

1. The instructor provides students with choices and options.<sup>G</sup>
2. The instructor conveys confidence in students to do well in the course.<sup>G</sup>
3. The instructor encourages students to ask questions.<sup>G</sup>
4. The instructor listens to how students like to do things.<sup>G</sup>
5. The instructor tries to understand how students see things before suggesting a new way to do things.<sup>G</sup>

**Equity - 4 items**

1. Certain students are favored more than others. (R)
2. The instructor favors the students he/she regards as smart. (R)
3. Some students have been treated unkindly by other students. (R)
4. Students in this course treat one another fairly.

**Performance Goal Structure - 6 items**

1. It is clear that doing better than your classmates is the only way to get a good grade in this course.
2. An important goal for many students in this course is to avoid doing worse than others.<sup>H</sup>
3. Many students just want to avoid performing poorly compared to other students.<sup>H</sup>
4. A few of the course members always try to do better than the others.<sup>B</sup>
5. The instructor wants students to avoid performing worse than other students.<sup>H</sup>
6. Students in this course talk about doing better than others.

<sup>A</sup> Modified Classroom Environment Scale (CES)

<sup>B</sup> Modified Learning Environment Inventory (LEI)

<sup>C</sup> Modified College and University Classroom Environment Inventory (CUCEI)

<sup>D</sup> Modified Hadré & Sullivan (2008)

<sup>E</sup> Modified College and University Lecture Classroom Environment Inventory (CULCEI)

<sup>F</sup> Modified-Middleton & Midgley (2002)

<sup>G</sup> Modified Learning Climate Questionnaire (short form of the autonomy support subscale). Scale accessed at:

<http://www.psych.rochester.edu/SDT/measures/paslearning.php><http://www.psych.rochester.edu/SDT/measures/paslearning.php>

<sup>H</sup> Modified Achievement Goal Questionnaire-Revised (AGQ-R)

## **Appendix C**

### **Personal Motivational Beliefs Items**



This final portion of the survey is designed to ask you about your own attitude, beliefs, and behaviors regarding your motivation for the target course.

Please answer the following items from a scale of Strongly Disagree - Strongly Agree.

**Self-Efficacy – 5 items**

1. I'm certain I can understand the most difficult material presented in the readings for the course. <sup>I</sup>
2. I'm confident I can understand the basic concepts taught in this course. <sup>I</sup>
3. I'm confident I can understand the most complex material presented by the instructor in this course. <sup>I</sup>
4. I'm confident I can do an excellent job on the assignments and tests in this course. <sup>I</sup>
5. I'm certain I can master the skills being taught in this class. <sup>I</sup>

**Attainment Value – 3 items**

1. It is important for me to get a good grade in this course. <sup>J</sup>
2. I feel that being a good student in this course is important. <sup>J</sup>
3. Understanding the subject matter in this course is very important to me. <sup>J</sup>

**Utility Value – 3 items**

1. What I am learning in this class is relevant to my life. <sup>K</sup>
2. The topics in this class are important for my career. <sup>K</sup>
3. In general, material from this class is not useful to me. <sup>K (R)</sup>

**Personal Interest – 3 items**

1. I am excited to learn about content covered in this course.
2. I think the course material is interesting.
3. I enjoy learning the course material.

**Course Anxiety – 5 items**

1. When I think about this course, I think how poorly I am doing compared to other students. <sup>L</sup>
2. When I think about this course, I think about the content I do not understand. <sup>L</sup>
3. When I think about this course, I think of the consequences of failing. <sup>L</sup>
4. I have an uneasy, upset feeling when I think about this course. <sup>L</sup>
5. I feel my heart beating fast when I think about this course. <sup>L</sup>

**Mastery Approach Goal Adoption – 3 items**

1. My aim is to completely master the material presented in this class. <sup>M</sup>
2. I am striving to understand the content of this course as thoroughly as possible. <sup>M</sup>
3. My goal is to learn as much as possible. <sup>M</sup>

**Performance Approach Goal Adoption – 3 items**

1. My aim is to perform well relative to other students. <sup>M</sup>
2. I am striving to do well compared to other students. <sup>M</sup>
3. My goal is to perform better than the other students. <sup>M</sup>

**Performance Avoidance Goal Adoption – 3 items**

1. My aim is to avoid doing worse than other students. <sup>M</sup>
2. I am striving to avoid performing worse than others. <sup>M</sup>
3. My goal is to avoid performing poorly compared to others. <sup>M</sup>

<sup>I</sup> Motivated Strategies for Learning Questionnaire (MSLQ): Self-efficacy for Learning and Performance Scale

<sup>J</sup> Modified- Schunk, Pintrich, & Meece (2008)

<sup>K</sup> Hulleman, Durik, Schwigert, & Harackiewicz (2008)

<sup>L</sup> Modified Motivated Strategies for Learning Questionnaire (MSLQ): Test Anxiety Scale

<sup>M</sup> Modified Achievement Goal Questionnaire-Revised (AGQ-R)