INSTRUCTOR COMMUNICATION BEHAVIORS AND CLASSROOM CLIMATE: EXPLORING RELATIONSHIPS WITH STUDENT SELF-EFFICACY AND TASK VALUE MOTIVATION

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

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This descriptive correlational research study examined the relationships between the independent variables of verbal immediacy, nonverbal immediacy, and autonomy-supportive behaviors, and the dependent variables of student self-efficacy and task value motivation. A purposive sample of 208 respondents was attained through the selection of two of the largest non-major specific courses in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. Students in the selected classes were asked to rate the frequency of instructor displays of immediate and autonomy-supportive behaviors and their subsequent self-efficacy and task value motivation. The respondents were asked to assess the course they attended immediately preceding the course in which collection occurred. The preceding-course method of assessment greatly increased student course and instructor variability. Students indicated assessing 48 different course prefixes.

Results indicated the respondents were 64 percent male and 36 percent female. The respondents represented a relative mix according to year in school. Freshman, sophomores, and seniors individually represented just over 20 percent each for a collective total of 66.4 percent. The largest respondent category was Junior level students who comprised 33.7 percent of the respondents.
Factor analysis was conducted on the Verbal Immediacy Behaviors (VIB) instrument, Nonverbal Immediacy Behaviors (NIB) instrument and the Learning Climate Questionnaire (LCQ). Results, based on the 208 respondents, indicated that the VIB was not assessing one unified construct. Four factors emerged from factor analysis of the VIB and explained 62% of the variance. Likewise, the NIB also failed to exhibit a one factor solution. The NIB yielded a four factor solution which explained 63% of the variance. The LCQ did yield a one factor solution which explained 58% of the variance. Results of the factor analysis and re-examination of the foundational theories resulted in concerns with the validity of the VIB. While the NIB also failed to reveal a single factor construct, the instrument construction and questions utilized were highly supportive of Mehrabian’s Implicit Communication Theory. The LCQ was deemed a valid measure of the autonomy-supportive behaviors of teachers.

Low to very low correlations existed between immediacy and autonomy constructs and the respondent demographics. Low to very low correlations were evidenced between the independent demographic variables and the dependent measures of student self-efficacy and task value motivation. Pearson correlations were conducted between the independent variables of verbal immediacy, nonverbal immediacy, and autonomy and the dependent variables of self-efficacy and task value. Results showed a low correlation between the three independent constructs and self-efficacy. Respectively, the correlation between self-efficacy and nonverbal immediacy, verbal immediacy, and autonomy was (r = .209, nonverbal; r = .334, verbal; r = .331, autonomy). The correlation between task value and the three independent constructs was r = .152 (nonverbal), r = .234 (verbal), and r = .243 (autonomy). Results indicated the verbal immediacy
explained 11% of the variance in self-efficacy and 6% of the variance in task value. Nonverbal immediacy explained 4% of the variance in self-efficacy and 2% of the variance in task value. Autonomy-supportive teacher behaviors explained 11% of the variance in self-efficacy and 6% of the variance in task value.

Recommendations raised concerns regarding the use of the Verbal Immediacy Behaviors instrument as a measure of immediacy, yet supported continued use of the Nonverbal Immediacy Behaviors and Learning Climate Questionnaire. Further research should examine the factorial validity of the NIB instrument with the use of a larger sample. Additionally, instructors need to be aware of the potential to influence student self-efficacy and monitor their verbal, nonverbal and autonomy-supportive behaviors. Instructors should increase early opportunities for student autonomy and self-efficacy development.

Further recommendations and conclusions support the need for continued research regarding the relationships between instructor communication and student motivation. The use of structural equation modeling was proffered as a possible means to examine, with greater acuity, the relationships between verbal immediacy, nonverbal immediacy, autonomy, self-efficacy and task value.
Dedicated to . . .

My wife, Tracy, for without your support, I would not be where I am today.

In Loving Memory of . . .

Grandpa Fred Narciso Lèal Velez

You always believed in education, optimism and hard work.
And you believed in me.
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I want to thank my Lord and Savior Jesus Christ, my wife and son, my parents, my loving and supportive families, my dear friends on both sides of the U.S. and all of the fine and professional faculty that have advised, encouraged, mentored and supported me through every step of the educational process.

I would not be who I am, but for you.
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CHAPTER 1

INTRODUCTION

Teachers have the ability to positively impact student motivation through the creation of a positive classroom environment. While the classroom learning environment is dependent on a host of variables, the hypothesis of this research was that teacher communication directly impacts the classroom environment and thus influences student motivation. Teacher communication was conceptualized as falling within the realm of teacher effectiveness and was perceived to be a vital element in the creation of an environment that motivates students to perform well.

Researchers have been wrestling with traits of effective teachers for years. Often, teacher traits are linked with perceivably unchangeable constructs such as personality. In college classrooms, it is imperative that professors continue to examine ways to effectively communicate curricular content to students. Perhaps teacher immediacy may provide insight into malleable qualities which positively enhance teacher effectiveness. As Hurt, Scott and McCroskey (1978) stated, “[there is] a difference between knowing and teaching, and that difference is communication in the classroom” (p. 3).

Teachers need to be aware of the subtle aspects of communication. The inadvertent glance, the subtle head nod, the half smile, and a host of other teacher
communicative behaviors have the potential to send either motivating or amotivating messages to students.

The ability to motivate students has long been a concern in education (Brophy, 2004; Suinn, 2006; Pintrich, 1994). If specific and teachable communication strategies, designed to enhance student motivation, can be identified and developed within college teachers, then educators would be better prepared to enhance student motivation. Stefanou, Perencevich, DiCintio, and Turner (2004) stated that “what teachers do and say can have powerful and pervasive effects on students’ intentions for learning, subsequent learning behaviors, and academic engagement” (p. 97).

When individuals are in a social setting, there is rarely a time in which they are not communicating. There are times, perhaps, when there is no verbal communication, but what about nonverbal or implicit communication? People are unable to shed one of the foundational mantles of humanity: communication. Everyday, in covert and overt ways, people communicate thoughts, feelings, beliefs, perceptions, and emotions without saying a word. How are these silent messages transmitted? Is it possible to identify physical cues which act as messengers to send these silent messages?

When students talk with each other concerning a class, they will often say such things as: “I don’t think the teacher likes me;” “I don’t think the teacher wants me to ask questions;” “I don’t think the teacher understands where I am coming from;” and “I don’t think the teacher cares if I understand the material or do well in the class.” Unspoken messages are constantly communicated through everyday interaction.

The transmittal of these silent messages is enhanced when a teacher steps in front of the students, becoming a focal point, and allowing for the magnification of silent
messages. For the duration of the class period, students analyze the verbal, nonverbal, implicit and behavioral cues emanating from the instructor. Students analyze these messages to determine the value of the content, the intent of the instructor, the role and expectations for the student, and the type of classroom environment the instructor wishes to encourage. Unfortunately, the verbal communication of the instructor may be overshadowed by nonverbal communication. What cues do silent messages transmit to students, and do these messages have any effect on student motivation?

Statement of the Problem

When a teacher steps into a classroom they enter into relationships with the learners. The nature of the relationships is dynamic: teachers interact with students, and students interact with the instructor, and both students and teacher interact to create a classroom environment. Identifying the influencers of this relationship is difficult. Commonly, researchers identify high inference variables such as friendliness, personality, and approachability. While these influences play a role in the teacher-student relationship, variables such as friendliness, personality, and approachability are difficult to quantify and extremely difficult to objectively measure.

Communication, both verbal and non-verbal, directly impacts the physical, psychological and emotional manner in which students interact with their surrounding environment (Mehrabian, 1981). If meaningful education is to occur, teachers must be equipped with the knowledge and skills necessary to foster an emotionally safe and secure classroom (Darling-Hammond & Bransford, 2005).
Classroom messages are constantly transmitted via a measure of verbal and non-verbal communication known as teacher immediacy. Immediacy, originally described by Albert Mehrabian, was defined as those communication behaviors that “enhance closeness to and nonverbal interaction with another” (1969, p. 203). The theory of immediacy highlights the relational nature of communication and the inherent relevance of communication as a means to either increase or decrease student motivation.

In addition to immediacy, teachers have the opportunity to shape the classroom climate in a manner which either supports or undermines student autonomy. According to Deci et al. (1982) and Reeve, Bolt, and Cai (1999), teachers can learn specific low inference tactics to improve and increase student autonomy. Course instructors hold a very influential position in the creation of classroom climate (Deci et al., 1991). Wentzel and Wigfield (1998) emphasized the importance of teacher support and stated that “…perceived support from teachers has been related to positive motivational outcomes, including the pursuit of goals to learn and to behave prosocially and responsibly, educational aspirations and values, and self concept” (pp.168-169). Wentzel and Wigfield (1998) stated:

We also propose that the social context within which learning takes place can have a powerful influence on students’ academic and social motivation at school. In particular, teachers’ instructional practices as well as the quality of their interpersonal interactions with students appear to make critical contributions to students’ motivation and performance (p. 156).

Student motivation has been identified as a critical component to student success (Brophy, 1988; Deci, Vallerand, Pelletier, & Ryan, 1991; Pintrich & Schunk, 2002). Effective teachers must understand and recognize their ability to either positively or
negatively impact student motivation. Self-efficacy and expectancy-value are two motivational constructs capable of bolstering student motivation (Bandura, 1986; Pajares, 1997; Wigfield & Eccles, 2000).

Jere Brophy recognized the relationship between teacher behaviors and student motivation. In 2004, referring specifically to factors which increase student motivation, Brophy stated that teachers need to, “learn to use timing, nonverbal expressions and gestures, and cueing and other verbal techniques to project a level of intensity that tells students that material is especially important and deserves close attention” (p. 276).

Teacher immediacy and motivation have the ability to significantly improve both teacher performance and student motivation, and as a result, they are vital to education and worthy of research.

Researchers have long recognized the need for research which examines both teacher immediacy and student motivation. Concerning teacher immediacy and student motivation, Gorham and Christophel (1992) stated that:

Given the attention to motivational concerns that appear in both the educational psychology literature and in popular press discussions of educational outcomes, we are convinced that continuing to explore the relationship of teachers’ communication behaviors to student motivation has both pedagogical and practical salience. (p. 251)

Furthermore, Stefanou et al. (2004) stated that, “There is a recognized need for studies that provide rich details from the classroom to help expand our understanding of the relationships between student motivation, how such motivation is expressed, and instructional practices” (p. 98).

The theory of immediacy considers and identifies verbal and nonverbal communication messages, yet is rarely connected with specific measurements of student
motivation. The need exists to identify whether or not teacher immediacy influences, or is associated with, corresponding self-efficacy and task value student motivation. Wentzel and Wigfield (1998) stated that “researchers need to explore further how different classroom and interpersonal contexts influence students’ academic and social motivation” (p. 170). Based on the expressed need of previous researchers, the purpose of this study was to examine the relationship between low inference immediacy behaviors, high inference autonomy-supportive behaviors, and student self-efficacy and task value motivation.

Purpose of the Study

The purpose of this study was to examine the relationship between teacher communication and student motivation. The overall hypothesis which served as a foundation for this research was simply that teacher communication behaviors would be associated with student motivation. Specifically defined, teacher communication (verbal immediacy, nonverbal immediacy and autonomy-support) will serve to influence student self-efficacy and task value motivation.

Conceptually, teacher communication resides under the overarching construct of teacher effectiveness. Teachers are judged, in a variety of ways, on their overall effectiveness. As hypothesized by this research, teacher communication is a critical element of teacher behaviors and reflective of teacher effectiveness. Figure 1.1 details the conceptual process leading to establishment of this research study. Teacher communication comprises the independent variables of verbal immediacy, nonverbal immediacy, and autonomy-supportive teacher behaviors. The presumed dependent
variables included elements of student motivation as expressed by student self-efficacy and task value motivation. Figure 1.2 depicts the conceptualization of the independent and dependent research variables.
Figure 1.1: Conceptual Background
Figure 1.2: Conceptualization of the independent and dependent research variables

**Teacher Communication**
- Teacher behaviors (*Immediacy*)
  - Verbal
  - Nonverbal
- Teacher behaviors (*Autonomy-supportive*)
  - Classroom Climate

**Teacher and Student Demographics**
- Class rank
- Student gender
- Class type (Elective vs. Required)
- Class type (Lecture, lab, recitation)
- Meeting time
- Class size
- Instructor type
- Instructor gender
- Instructor age

**Student Motivation**
- Student Expectancy Motivation:
  - Self-efficacy
- Student Task Value Motivation:
  - Task Value
Connections between the Independent and Dependent Variables

The independent variables of verbal immediacy, nonverbal immediacy, and autonomy-support and the dependent variables of student self-efficacy and task value motivation are all linked by extant theory. The unifying dimension between both independent and dependent variables concerns the importance of social, interpersonal and environmental interactions.

The independent variables of verbal and nonverbal immediacy focus on an instructor’s relationship with students. The relationship is perceived to be active, involving interpersonal communication which is foundational to teacher-student interaction. The third independent variable, autonomy-support, involves a measure of the level of autonomy provided by an instructor, and the influence of student autonomy on the classroom environment. The unifying thread among the independent variables is personal instructor interaction with students and the perceived influence of this interaction on the classroom environment. Figure 1.3 details the theories underlying the independent variables.

The dependent variables of student self-efficacy and task value motivation are also supported by theories based on the importance of social interaction and the manner in which the environment influences student motivation. Self-efficacy and task value are situated within a social and environmental framework.

Both independent and dependent variables are linked by a common emphasis on the importance of interpersonal interaction and classroom/social environment.
Figure 1.3 details the specific theoretical tenets which relate the independent and dependent variables to the interpersonal, social aspect of human interaction.
### Objectives of the Study

1. Describe the population based on demographic independent variables.
2. Determine the common factors between immediacy and classroom climate.
3. Explore the relationship between the common factors and demographic variables.
4. Explore the relationship between the independent demographic variables and the dependent variables.
5. Explore the relationship between the common factors identified in RQ 2 and the dependent variables.
6. Explore the relationship between the common factors and self-efficacy and task value.

### Assumptions

- **Implicit Communication Theory**—intended to describe the interpersonal relationships between individuals

  - **Immediacy Theory (Nonverbal)**—human behaviors will promote feelings of arousal, liking, pleasure, or dominance
  - **Immediacy Theory (Verbal)**—deals with increasing student liking and decreasing student apprehension

- **Self-determination Theory**—deals with the development of personality within social contexts (Deci & Ryan, 2007)

  - **Cognitive Evaluation Theory**—designed to describe the effects of social contexts on intrinsic motivation (Deci & Ryan, 2002)

- **Social Cognitive Development Theory**—behavioral, cognitive, personal, and environmental factors interact as determinants of each other (Bandura, 1986)

  - **Interactive Agency**—individual motivation is influenced by personal determinants, action, and environmental factors (Bandura, 1986)
  - **Five Basic Human Capabilities:** symbolizing, forethought, vicarious observation, self-regulation, and self-reflection
  - **Self-efficacy**—gained through mastery, vicarious, verbal, and physiological experiences

- **Expectancy-Value Theory**—emphasizes expectancies for success, and subjective task value (Eccles et al., 1983)

  - **Subjective Task Value**—individuals tend to value tasks which fulfill social self-image
  - **Attainment Value**—individuals tend to engage in tasks which meet social or personal identity

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### Figure 1.3: Theories relating the independent and dependent variables

<table>
<thead>
<tr>
<th>Communication influences</th>
<th>Social Environment/Classroom Climate influences</th>
<th>Student Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implicit Communication Theory—intended to describe the interpersonal relationships between individuals</td>
<td>Liking; Closeness; Belonging; Acceptance</td>
<td>Social Cognitive Development Theory—behavioral, cognitive, personal, and environmental factors interact as determinants of each other (Bandura, 1986)</td>
</tr>
<tr>
<td>• Immediacy Theory (Nonverbal)—human behaviors will promote feelings of arousal, liking, pleasure, or dominance</td>
<td>Competence; Relatedness; Autonomy</td>
<td>• Interactive Agency—individual motivation is influenced by personal determinants, action, and environmental factors (Bandura, 1986)</td>
</tr>
<tr>
<td>• Immediacy Theory (Verbal)—deals with increasing student liking and decreasing student apprehension</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Attainment Value—individuals tend to engage in tasks which meet social or personal identity</td>
</tr>
</tbody>
</table>
Assumptions

The research study was guided by several important assumptions. First, an assumption was made regarding the truthfulness of the respondents. All responses were believed to be truthful.

An assumption was made that the students participating in this study had experienced normal classroom conditions consisting of approximately six weeks of exposure to instructor behaviors. The date of assessment was established prior to the beginning of Winter quarter. Thus, it was assumed that the students encountered normal conditions during the first six weeks of the Winter quarter.

An assumption was made that the instructor was able to contribute significantly to the learning environment. Instructors assume relational roles with the students and were assumed to influence and shape the classroom environment through course assessments, interpersonal communication, positive feedback, and autonomy-supportive behaviors.

An assumption was made that the examination of instructor communication behaviors and the classroom environment should occur at the college level. The focus on the college classroom was intended to provide empirical support for possible instructor personal development. In support of this assumption, Pintrich (1994) stated:

. . . a classroom-level focus is the most meaningful for college instructors and their teaching. Instructors cannot change or easily influence factors outside the classroom—the institutional and community norms and structures, the attitudes and beliefs of the students’ friends and roommates, or the students’ family background and beliefs—but instructors can change and control what they do in their own classrooms. (p. 24)
An assumption was made that students would enter the classroom with many prior beliefs concerning the course subject, nature of the class, and the instructor. Therefore, the results may evidence a dynamic environment in which there may be many observed and latent interactions between research constructs (Pintrich, 1994).

An assumption was made that students who were engaged by an immediate, autonomy-supportive instructor would experience increased motivation. Students who felt the instructor cared and related to them will be challenged to provide more course effort, resulting in a cyclical benefit to the class environment.

Objectives of the Study

The objectives of the research study were to:

1. Describe the population based on demographic independent variables.
2. Determine the common factors of immediacy and classroom climate.
3. Explore the relationship between the common factors and demographic variables.
4. Explore the relationship between the independent demographic variables and the student motivation.
5. Explore the relationships between the independent common factors and the dependent motivational constructs of self-efficacy and task value.

Limitations of the Study

The following sections address limitations of particular importance to the research. The limitations section will detail possible research design and implementation
difficulties inherent in descriptive correlational research. Limitations for generalization and the presence of extraneous variables are discussed.

The delimitation section seeks to define the specific research areas that will not be addressed. In order to craft effective research, it is often necessary to identify and research a specific problem. While it would be tremendous to shed light on all aspects of immediacy and motivation, a wide and shallow study might lack the depth of findings and specificity of results necessary for improving specific components of teacher education.

Limitations

Due to research design, the subjects selected for assessment represent a non-probability sample. Therefore, the results are not generalizable to any audience other than the respondents. The treatment in this study was a naturally occurring treatment which is not controlled or influenced by the researcher. Respondents may have varying levels of treatment depending on course attendance and the resulting exposure to instructor immediacy. In an effort to ensure substantial exposure to instructor behaviors, the assessment instrument was administered to college students during the sixth week of the 10 week quarter.

While the students surveyed attended one of two selected courses, the selected measurement was on the course immediately preceding the course in which collection occurred. The purposive sample included a relative heterogeneous mix of professors from throughout the institution. In an effort to assess the variability of the assessed instructors, the questionnaire asked the students to write the course prefix of the course
they were assessing. This aided in the determination of variability of colleges and departments assessed.

The size of the purposive sample was limited to those students in attendance on the day the assessment was administered. In order to insure participant anonymity, student identifiers were not retained. Student responses were summarized from the number of students who were in attendance, and those not in attendance were considered non-respondents. The researcher only had access to the research participants during one class session, and no attempt was made to follow-up on non-respondents.

The research study utilized a non-probability sample. As a result, statistical analysis options were limited. Statistics utilized included descriptive statistics describing the sample, as well as additional statistics which aided in answering the stated objectives. Factor analysis was utilized to identify the relatedness of individual teacher behaviors. Factors, constructs, and independent demographic characteristics were analyzed, using correlational statistics, for the purpose of identifying the direction and magnitude of relationships. The variance explained by the independent variables was identified through the use of the coefficient of determination.

The respondents were asked to respond to several demographic questions. An assumption was made that the respondents responded in the most truthful and accurate manner possible. One question asked the students to assess the perceived age of their instructor. While this question was limited by the potential estimation of the respondent, it was nevertheless the most accurate estimation attainable without the direct identification of specific instructors.
There is an inherent limitation in this type of study due to the inability to control or identify potentially confounding variables. The observed differences in teacher immediacy may be related to various instructor specific variables such as: number of years engaged in teaching, number of years teaching a specific course, type/amount of previous instructor training, experience teaching in secondary education, personal enjoyment of the course subject, teaching self-efficacy, task value, personality type, learning style or teaching style. These variables could be examined if one particular instructor was being observed. However, since this research was intended to measure correlations between instructor immediacy and student motivation, a myriad of instructors was desired. The research did consider the instructor-specific variables such as instructor gender, instructor type (e.g. professor or graduate student), and instructor age; variables that can be readily identified by the students.

With survey instrumentation, the truthfulness of the respondents and the reliability and validity of the instruments connote possible limitations. Several respondents may be coming from the same class and be in a disgruntled mood based on homework or test assignments. Since questionnaires only capture a slice of time, this could prove limiting.

Delimitations

The theories pertaining to teacher immediacy and student motivation are sizable. As a result, the researcher was not able to craft and complete an all-encompassing research project. Certain aspects were not intended to be researched or addressed at this time. Because the research project considers four separate, rather large, theories, the
review of the literature was focused on past research which directly applied to the
research objectives. While many studies exist that address similar related issues, unless
the study directly related to the stated objectives, it was excluded.

Teacher immediacy is a specific construct which falls under the domain of teacher
communication and within the realm of teacher effectiveness. This research was not
intended to look at other domains relative to teacher effectiveness.

The researcher acknowledges that course content may play a role in student
motivation. However, this study will not examine course content as a variable. This
study will explore possible motivational differences between required versus elective
courses.

The researcher will not be examining the myriad of student variables that may
influence or be associated with student motivation. Despite the assumption that
background influences may contribute to motivation, this type of research was not
intended or designed to devote attention to studying individual students. The researcher
did not attempt to measure or correlate teacher immediacy with student learning, either
general knowledge or specific cognitive learning.

This study was not intended to explore individual teacher immediacy with a single
class or course. The researcher did not examine the relationship between a specific
teacher and their students. Assessing teacher immediacy and student motivation based on
a previous course diminishes the likelihood of instructor reluctance towards student
assessment. Instructors will be more likely to allow assessment if the immediacy
measures are based on other teachers.
Definition of Terms

Immediacy and motivation are the two main constructs upon which this study is based, yet there are several terms which will be used throughout the research study. A listing of important terms and their meaning in the context of this study are listed below.

Autonomy:

Having and exercising independence in both personal will and freedom.

Autonomy-supportive:

Refers to teachers who, in addition to other behaviors, are responsive (e.g., spend time listening), supportive (e.g., praise the quality of performance), flexible (e.g., give students time to work in their own way), and motivate through interest (e.g., support intrinsic motivation)” (Reeve, 2002, p. 186).

Class type:

Separated into two nominal categories, elective or required classes.

Communication:

The process of implicitly or explicitly transmitting signals culturally perceived as communicative.

Dislike:

Negative attitude and a lack of preference (Mehrabian, 1981).

Expectancy-value:

Behavior undertaken depends on the perceived likelihood that the behavior will lead to the goal and the subjective value placed on that goal (Weiner, 1992).

Informational Atmosphere:

Another way to describe an autonomy-supportive environment.
Immediacy:

Communication behaviors that enhance closeness to and nonverbal interaction with another (Mehrabian, 1981).

Immediacy Behaviors:

Behaviors specific to both verbal and nonverbal communication.

Implicit Communication:

“. . . Expressions of feelings and attitudes above and beyond the contents conveyed by speech.” Examples would include: the expressive quality of the voice, speech errors or pauses, rate, duration, volume, inflection, and pitch (Mehrabian, 1981, p. 2).

Instructor Type:

Separated into two nominal categories, faculty or graduate student.

Learning Climate Questionnaire Instrument:

Designed by Williams and Deci (1996) to assess student perceived levels of autonomy.

Liking:

Positive attitude, liking and preference (Mehrabian, 1981)

Motivated Strategies for Learning Questionnaire:

This 81 question instrument was designed to assess motivation and learning strategies (Pintrich, Smith, García, & McKeachie, 1991, 1993).

Motivation:

The theoretical construct used to explain the initiation, direction, intensity, persistence, and quality of behavior, especially goal-directed behavior (Maehr & Meyer, 1997).

Nonverbal Immediacy Behaviors Instrument:

A 20 question instrument designed to measure nonverbal immediacy behaviors (Richmond, Gorham, & McCroskey, 1987).
Nonverbal Behavior:

“... Refers to actions as distinct from speech, and includes only such phenomena as facial expressions, hand and arm gestures, postures, positions, and various movements of the body or the legs and feet.” (Mehrabian, 1981, p. 2)

Nonverbal Immediacy:

The use of subtle behaviors to convey a certain state, relation or feeling (Mehrabian, 1981).

Rapport:

A word used to describe an appropriate two-way communication interaction between student and teacher. The word implies the presence of openness, clarity and reciprocity in communication between teacher and student.

Self-Determination:

A macro-theory of human motivation focusing on the degree to which human behaviors are either volitional or self-determined (Deci & Ryan, 1985)

Self-Efficacy:

“... people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (Bandura, 1994, p. 71)

Social Cognitive Theory:

Emphasizes learning through observation of others and is concerned with cognitive factors such as beliefs, self perceptions, and expectations.

Student Autonomy:

The degree to which students feel their teachers are autonomy supportive (Deci & Ryan, 1985)

Task Value:

Judgments of how interesting, useful, and important the course content is to the student (Duncan & McKeachie, 2005).
**Teacher Immediacy:**

Used to describe the combination of both verbal and non-verbal communication messages transmitted to students via the teacher (Mehrabian, 1981).

**Verbal Immediacy:**

Explicit auditory messages or communication which often entails personalized two-way interaction (Mehrabian, 1981).

**Verbal Immediacy Behaviors Instrument:**

A 14 question instrument designed to measure verbal immediacy behaviors (Gorham, 1988).

**Significance of the Inquiry**

Teacher behaviors possess the potential to shape the learning environment and influence the motivation of the student. Significant effort is critical in determining the extent to which teacher communication behaviors either motivated or demotivated students. Teachers who are aware of, and sensitive towards, their communication behaviors may be better able to alter the learning environment, maximizing the potential of student motivation and subsequent learning.

Teaching is comprised of much more than simple recitation of knowledge. Instructors must be equipped with an understanding of the communicative skills necessary to promote learning. As Hurt, Scott and McCroskey (1978) stated, “[there is] a difference between knowing and teaching, and that difference is communication in the classroom” (p.3).

This research has the opportunity to positively impact college teachers. If college teachers are able to identify, and determine, the importance of key verbal and nonverbal
messages, they will have the capacity to improve classroom communication with students. Research indicates the environment of the classroom can greatly affect student motivation. Garcia and Pintrich (1996) emphasized the influential role of the college classroom and stated that “. . . what happens in the college classroom does impact motivation. Indeed, creating a sense of autonomy and self-determination in a college classroom may be a small step towards offsetting the anomie and cynicism often found among college students in large lecture classes” (p. 485). The importance of the college instructor and the significance of the instructors’ communication behaviors in the development of student motivation support the value of this research.

Student learning needs to be cultivated in a welcoming, emotionally secure environment where students feel motivated to explore and discover new learning. Research on teacher communication behaviors has the potential to establish a framework upon which to build such an environment. Pintrich (1994) stated that “there is still much research to be done, but this type of research that attempts to link different features or instructors’ behaviors to different cognitive and motivational outcomes will benefit most our understanding of college teaching and learning” (p. 39).
CHAPTER 2

REVIEW OF THE LITERATURE

Statement of the Problem

When a teacher steps into a classroom they enter into relationships with the learners. The nature of the relationships is dynamic: teachers interact with students, and students interact with the instructor, and both students and teacher interact to create a classroom environment. Identifying the influencers of this relationship is difficult. Commonly, researchers identify high inference variables such as friendliness, personality, and approachability. While these influences play a role in the teacher-student relationship, variables such as friendliness, personality, and approachability are difficult to quantify and extremely difficult to objectively measure.

Communication, both verbal and non-verbal, directly impacts the physical, psychological and emotional manner in which students interact with their surrounding environment (Mehrabian, 1981). If meaningful education is to occur, teachers must be equipped with the knowledge and skills necessary to foster an emotionally safe and secure classroom (Darling-Hammond & Bransford, 2005). Classroom messages are constantly transmitted via a measure of verbal and non-verbal communication known
teacher immediacy. Immediacy, originally described by Albert Mehrabian, is defined as those communication behaviors that “enhance closeness to and nonverbal interaction with another” (1969, p. 203). The theory of immediacy highlights the relational nature of communication and the inherent relevance of communication as a means to either increase or decrease student motivation. In addition to immediacy, teachers have the opportunity to shape the classroom climate in a manner which either supports or undermines student autonomy. According to Deci et al. (1982) and Reeve et al. (1999), teachers can learn specific low inference tactics to improve and increase student autonomy. Course instructors hold a very influential position in the creation of classroom climate (Deci et al., 1991). Wentzel and Wigfield (1998) emphasized the importance of teacher support and stated, “. . . perceived support from teachers has been related to positive motivational outcomes, including the pursuit of goals to learn and to behave prosocially and responsibly, educational aspirations and values, and self concept” (pp.168-169). Wentzel and Wigfield (1998) stated:

We also propose that the social context within which learning takes place can have a powerful influence on students’ academic and social motivation at school. In particular, teachers’ instructional practices as well as the quality of their interpersonal interactions with students appear to make critical contributions to students’ motivation and performance (p. 156).

Student motivation has been identified as a critical component to student success (Brophy, 1988; Deci, Vallerand, Pelletier, & Ryan, 1991; Pintrich & Schunk, 2002). Effective teachers must understand and recognize their ability to either positively or negatively impact student motivation. Self-efficacy and expectancy-value are two
motivational constructs capable of bolstering student motivation (Bandura, 1986; Pajares, 1997; Wigfield & Eccles, 2000).

Jere Brophy recognized the relationship between teacher behaviors and student motivation. In 2004, referring specifically to factors which increase student motivation, Brophy stated that teachers need to, “learn to use timing, nonverbal expressions and gestures, and cueing and other verbal techniques to project a level of intensity that tells students that material is especially important and deserves close attention” (p. 276). Teacher immediacy and motivation have the ability to significantly improve both teacher performance and student motivation, and as a result, they are vital to education and worthy of research.

Researchers have long recognized the need for research which examines both teacher immediacy and student motivation. Concerning teacher immediacy and student motivation, Gorham and Christophel (1992) stated that:

Given the attention to motivational concerns that appear in both the educational psychology literature and in popular press discussions of educational outcomes, we are convinced that continuing to explore the relationship of teachers’ communication behaviors to student motivation has both pedagogical and practical salience. (p. 251)

Furthermore, Stefanou, et al. (2004) stated that, “There is a recognized need for studies that provide rich details from the classroom to help expand our understanding of the relationships between student motivation, how such motivation is expressed, and instructional practices” (p. 98).

The theory of immediacy considers and identifies verbal and nonverbal communication messages, yet is rarely connected with specific measurements of student motivation. The need exists to identify whether or not teacher immediacy influences, or
is associated with, corresponding self-efficacy and task value student motivation.

Wentzel and Wigfield (1998) stated, “Researchers need to explore further how different classroom and interpersonal contexts influence students’ academic and social motivation” (p. 170). Based on the expressed need of previous researchers, the purpose of this study was to examine the relationship between low inference immediacy behaviors, high inference autonomy-supportive behaviors, and student self-efficacy and task value motivation.

Purpose of the Study

The purpose of the study was to examine the relationship between teacher communication and student motivation. The overall hypothesis which served as a foundation for this research was simply that teacher communication behaviors would be associated with student motivation. Specifically defined, teacher communication (verbal immediacy, nonverbal immediacy and autonomy-support) will serve to influence student self-efficacy and task value motivation.

Conceptually, teacher communication resides under the overarching construct of teacher effectiveness. Teachers, in a variety of ways, are judged on their overall effectiveness. As hypothesized by this research, teacher communication is a critical element of teacher behaviors and thus reflective of teacher effectiveness. Figure 2.1 details the conceptual process leading to establishment of this research study. Teacher communication comprises the independent variables of verbal immediacy, nonverbal immediacy, and autonomy-supportive teacher behaviors. The presumed dependent variables included elements of student motivation as expressed by student self-efficacy
and task value motivation. Figure 2.1 depicts the conceptualization of the independent and dependent research variables.

Objectives of the Study

The objectives of the research study were to:

1. Describe the population based on demographic independent variables.
2. Determine the common factors of immediacy and classroom climate.
3. Explore the relationship between the common factors and demographic variables.
4. Explore the relationship between the independent demographic variables and student motivation.
5. Explore the relationships between the independent common factors and the dependent motivational constructs of self-efficacy and task value.

Overview of Chapter 2

Support for the theoretical foundations of this study was found in the exploration of the following four theories: Immediacy, Self-Determination, Self-Efficacy and Task Value. Both self-efficacy and task value were grouped under the umbrella construct of expectancy-value. Figure 2.1 details the theories examined, specific construct analyzed in the literature, and the measured constructs. Chapter 2 is divided according to independent and dependent theoretical constructs. The first two sections examine the independent variables characterized by the immediacy and self-determination theories. The latter part of chapter 2 examines the dependent constructs and explores self-efficacy and task value motivational theories.
Figure 2.1: Conceptual Background
Figure 2.2: Overview of Chapter 2
Immediacy: “Our Theory”

Why does Albert Mehrabian refer to the Implicit Communication Theory as “our theory?” The present researcher was not in any way influential in the establishment of the Implicit Communication Theory, yet the verbiage used implies a sense of cohesion, unity, and belonging. The word choice employed by Mehrabian is specific and intentional, designed to induce within the reader feelings of personal involvement, closeness, and belonging.

According to the Implicit Communication Theory, messages are constantly transmitted via a measure of verbal and non-verbal communication known as immediacy. Immediacy, developed by Albert Mehrabian, is defined as those communication behaviors that “enhance closeness to and nonverbal interaction with another” (1969, p. 203). The Implicit Communication Theory and the underlying theory of immediacy, provide a basis to identify and attempt to measure low inference teaching behaviors.

Albert Mehrabian is credited as the originator of the Implicit Communication Theory (1981). Mehrabian began his theory by postulating that “. . . people rarely transmit implicitly the kinds of complex information that they can convey with words; rather, implicit communication deals primarily with the transmission of information about feelings and like-dislike or attitudes” (Mehrabian, 1981, p. 3). Mehrabian identifies five major categories of implicit behaviors (see Figure 2.3).
Five major categories of Implicit Behavior

- **Emblem**: Refers to the small class of nonverbal acts that can adequately be translated into words. 
  - Handshake
  - Smile
  - Nod
  - Shaking a fist

- **Illustrator**: Is a part of speech and serves the function of emphasis.
  - Pointing gestures
  - Hand and head movements used to stress primary words
  - Movements which add emphasis

- **Affect Display**: Highly related to Implicit Communication and focuses on primary effects.
  - Happiness
  - Fear
  - Anger
  - Surprise
  - Disgust
  - Sadness

- **Regulator**: "... Refers to acts that help to initiate and terminate the speech of participants in a social situation” (p.4).
  - Indicators to:
    - Keep talking
    - Clarify
    - Hurry up and finish

- **Adaptor**: Acts related to the satisfaction of bodily needs.
  - Moving to a more comfortable position
  - Scratching
  - Shifting weight

Figure 2.3: Five major descriptors and categories of implicit behavior (Mehrabian, 1981)
Before delving into the major tenets of the Implicit Communication Theory, it is important to consider the coding that occurs in communication. Mehrabian (1981) described the interaction between symbols and referents and stated:

... any communication act involves, on the one hand, a group of symbols and, on the other hand, the referents (objects, events, or relationships) designated by those symbols. Coding rules are used to infer referents from symbols (decoding) and to convey referents through the use of symbols (encoding). Analogously, within the field of implicit communication, the implicit behaviors are the symbols of communication, and the referents are our emotional states and our attitudes, likes-dislikes, or preferences. (pp. 4-5)

Thus, Implicit Communication Theory deals with a wide variety of the symbols and the “decoding” process utilized by the observer to form emotional states, attitudes, likes-dislikes, and preferences.

Mehrabian sought to undergird the Implicit Communication Theory by basing the theory on three well-defined emotional response dimensions. Mehrabian (1981) believed that all emotional states could be described in terms of three independent dimensions of pleasure-displeasure, arousal-nonarousal, and dominance-submissiveness. Figure 2.4 details the different dimensions as well as the definitions for each dimension.
In addition to the three major independent emotional response dimensions, there is a fourth dependent dimension to implicit communication, namely the interaction between liking and emotion. The referents of implicit communication have been previously established as attitudes, likes-dislikes, and preferences. Therefore, it is vital to
examine the interaction between the referents and the emotional states. Mehrabian stated that:

... when an object or person elicits pleasure, there is a positive correlation between the arousing quality of that object or person and its liking—that is, the more arousing a pleasurable entity is, the more it is liked. When an entity elicits displeasure, there is a negative correlation between the arousing quality of that entity and its liking—the more arousing an unpleasant entity is, the less it is liked. (pp.11-12)

According to Mehrabian (1981), liking, as it relates to emotional reactions, is key to developing an understanding of the interaction between individuals. The simple set of relationships, conveyed in Figure 2.5, “... allows us to infer a person’s liking of people and things by knowing her emotional reactions to those people and things; or, conversely, to infer the person’s emotional reactions to different people and objects from the liking she exhibits” (Mehrabian, 1981, p. 12).

![Figure 2.5: The relations of pleasure-displeasure and arousal-nonarousal with degree of liking. (Mehrabian, 1981)](image)
The major theoretical tenets of the Implicit Communication Theory discussed thus far indicate that the referents of implicit communication are emotions and attitudes, likes-dislikes, and preferences. The emotional reactions to these referents can be summed up in the three dimensions of pleasure-displeasure, arousal-nonarousal, and dominance-submissiveness (Mehrabian, 1981).

According to Mehrabian, an important syntactic distinction must be made between nonverbal behavior and implicit communication. Nonverbal behaviors are most often coupled with specific nonverbal actions such as facial expressions, hand and arm gestures, body posture and positioning, and movements of the arms or legs (Mehrabian, 1981). Implicit communication encompasses a broader array of nonverbal communication signals. Examples of implicit communication could include those used for nonverbal behaviors, in addition to expressive quality of the voice, speech errors or pauses, rate, duration, volume, inflection, and pitch (Mehrabian, 1981).

The primary distinction between nonverbal behavior and implicit communication lies in the subtlety of the behaviors. Implicit communication encompasses a wide variety of different aspects of speech which seem, whether intended or not, to convey expressions of feelings and attitudes (Mehrabian, 1981). The subtlety with which implicit communication occurs seems to account for the lack of explicit coding in most cultures. It is possible to learn a second language, and communicate in an understandable manner, yet still, by way of subtle nuances, convey inappropriate thoughts, feelings, or intentions. Figure 2.6 details the distinction between nonverbal behaviors and implicit communication.
Figure 2.6: Comparison of nonverbal communication behaviors and implicit communication (Mehrabian, 1981).
Despite the lack of explicit coding in relation to nonverbal and implicit communication, various cultures consistently develop surprisingly intricate methods of subtle and implicit communication, leading one to ponder whether there are particular common and universal codes which can support the understanding and development of implicit communication. Mehrabian (1981) stated, “Our thesis is that these codes are based on a few metaphors that are a common and important part of human life” (p. 13). Mehrabian proceeds to describe three metaphors which aid in the development of implicit codes: the approach metaphor, arousal-activity metaphor, and power metaphor.

The approach metaphor is based on the simple concept that people approach what they like, and avoid what they do not like. This system of either approach or avoidance serves to provide a framework within which individuals are able to interpret the actions and expressions of others (Mehrabian, 1981). Mehrabian (1981) stated that, “Approach indicates preference, positive evaluation, and liking, whereas avoidance indicates lack of preference, dislike, and, in extreme cases, fear” (p. 14). Mehrabian’s simple concept contains foundational implications for the theory of immediacy.

The arousal-activity metaphor is based on arousal, one of the most basic ways in which individuals convey feelings. Arousal is a term which incorporates, on a continuum, all human activity from sleeping to a manic state (Mehrabian, 1981). Mehrabian (1981) defines arousal as, “. . . the basic act of emotional reaction to one’s environment and can be either positive or negative in quality” (p.14).

The power metaphor relates to the manner in which individuals feel powerful or fearless. Power has often been related to physical size, demonstrative motions, and, at times, the nature of an individual’s walk. Fearlessness is displayed by a turned back, and
an overall ease of posture indicating familiarity, ease, and comfort (Mehrabian, 1981). Different cultures tend to display the power metaphor in different ways, yet the underlying premise remains the same.

The Implicit Communication Theory, espoused by Mehrabian (1981), provides a theoretical foundation for the concept of immediacy. Immediacy has been defined as those communication behaviors which, “. . . enhance closeness to and nonverbal interaction with another” (Mehrabian, 1969, p. 203). Consequently, Mehrabian refers to the Implicit Communication Theory as “our” theory. The wording is purposefully designed to encourage feelings of closeness and belonging. Figure 2.7 summarizes the major tenets of the Implicit Communication Theory, detailing both nonverbal and implicit communication, with the intent to describe the symbols, as well as the referents.
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**Grounded on Three Common Metaphors**
- Approach Metaphor
- Arousal-Activity Metaphor
- Power Metaphor

Figure 2.7: Summary of the foundational elements of Implicit Communication Theory
Overview of Immediacy

Nonverbal Immediacy

Nonverbal immediacy is largely a relational language perceived to convey affective feelings of warmth, closeness, and belonging (Richmond, Gorham, & McCroskey, 1987). Nonverbal immediacy has been defined as the implicit use of closeness-inducing behavioral cues (Andersen, 1979). In 1981, Mehrabian stated that, People rarely transmit implicitly [nonverbally] the kinds of complex information that they can convey with words; rather, implicit communication deals primarily with the transmission of information about feelings and like-dislike or attitudes. The referents of implicit behaviors, in other words, are emotions and attitudes or like-dislike. (p. 3)

The concept of nonverbal immediacy is based on the idea that teacher nonverbal behaviors will promote feelings of arousal, liking, pleasure, and dominance. The feelings of arousal, liking, pleasure, and dominance are mediated through actions such as eye contact, body position, physical proximity, personal touch, and body movement (Richmond, Gorham, & McCroskey 1987). In 1979, Andersen studied the effects of nonverbal immediacy on affective learning and concluded that, “The more immediate a person is, the more likely he/she is to communicate at a close distance, smile, engage in eye contact, use direct body orientation, use overall body movement and gestures, touch others, relax, and be vocally expressive” (p. 548).
**Verbal Immediacy**

Verbal teacher immediacy refers directly to stylistic verbal expressions used by teachers to develop within students a degree of like or dislike towards the teacher. Specific examples include syntactic expressions of present or past tense verbs, probability (will vs. may), ownership statements (my/our class), and inclusive references (we vs. I) (Rubin, Palmgreen, & Sypher, 1994).

Verbal immediacy has been shown to be highly correlated with nonverbal immediacy (Edwards & Edwards, 2001), and was associated with effective teaching (Gorham, 1988). Furthermore, verbal immediacy has shown relationships with student motivation, perceived cognition, and affective learning (Christophel, 1990), as well as increased student willingness to participate in and contribute to class discussions (Christensen, Curley, Marquez, & Menzel, 1995; Menzel & Carrell, 1999). Verbal immediacy, when applied to teaching, appears to increase student cognitive, affective, and behavioral learning (Christophel, 1990; Gorham, 1988; Gorham & Christophel, 1990; Plax, Kearney, McCroskey, & Richmond, 1987). The immediacy of teachers, combining both verbal and nonverbal constructs, appears to increase student liking for instructors, decrease student apprehension, and increase overall student liking for the course and subject matter (Butland & Beebe, 1992; Rodriguez, Plax, & Kearney, 1996; Plax, Kearney, McCroskey, & Richmond, 1987).

In teaching, verbal immediacy is most often expressed through the use of praise for student efforts, humor, self-disclosure, willingness to engage students in conversation, and overall openness and willingness to meet and interact with students (Edwards & Edwards, 2001; Gorham, 1988).
Teacher immediacy (verbal and nonverbal) and motivation

Nonverbal immediacy has been linked to student motivation (Christophel, 1990; Fymier, 1994). However, after briefly discussing nonverbal immediacy, it is important to spend time reviewing the measurement of motivation before focusing on the connection between nonverbal immediacy and motivation.

Traditionally, motivation measurements used in immediacy studies consist of one main type of scale. Specifically, the scale is intended to examine student trait or state motivation. Trait motivation assesses how students feel in general about college classes, while the state motivation assesses how student feel in a specific course (Christophel, 1990; Christophel & Gorham, 1995). Both scales consist of 12 identical bi-polar adjectives. Students are commonly asked to complete both scales at one time, with one scale directed towards a specific course (state) and one directed towards college classes in general (trait). Reliabilities for the common motivation scales ranged from 0.91-0.96 (Christophel, 1990).

A paucity of research exists relating to teacher immediacy and student motivation. Most of the articles reviewed tend to combine verbal and nonverbal immediacy under the synthesized heading of teacher immediacy. Thus, the literature review for immediacy will combine verbal and nonverbal immediacy into an overall measure of teacher immediacy. However, if the reviewed research makes a distinction, the literature review will reflect that distinction and the more specific terms of verbal and nonverbal immediacy will be utilized.

Four specific articles were found that examine the relationship between nonverbal immediacy and student motivation (Christophel, 1990; Gorham & Christophel, 1992;
Frymier, 1994; Christophel & Gorham, 1995). It is important to recognize that each of these articles intended to examine motivation as a mediating factor linking immediacy to student learning. Viewed together, these authors sought to, “... illustrate a sequential process in which teacher immediacy arouses students, which directs their attention and affects their continuation (i.e., it enhances motivation), which in turn increases learning” (Christophel & Gorham, 1995, p. 293).

Motivation has been linked to nonverbal immediacy; yet, this link is somewhat tenuous. Christophel (1990) examined the correlation between nonverbal immediacy and student motivation and published correlations ranging from 0.34 to 0.47. The results of Christophel (1990) indicated a collinear relationship between nonverbal immediacy and trait and state motivation. Because both nonverbal immediacy and student motivation were conceptualized as predictor variables, Christophel (1990) concluded that, “... for the most part, nonverbal immediacy must first modify student state motivation, as the theory underlying this research predicted, in order to impact learning” (p. 332). Christophel (1990) did note one distinct exception to the nonverbal immediacy and student motivation pattern of influence. A significant portion of variance in attitude towards the instructor, and tendency to enroll again, was predictable directly by nonverbal immediacy. Stated simply, nonverbal immediacy, according to Christophel (1990), appears to directly influence student perceptions of the instructor and tendency to enroll again, as well as student state and trait motivation. Throughout the Christophel (1990) article, Christophel reiterates the existence of a positive association between nonverbal immediacy and state motivation. Christophel noted the paucity of research related to examining specific motivation and immediacy associations. Christophel (1990)
stated that, “Although a number of studies have explored these theories [immediacy and motivation] independently, there appear to be little specific research isolating related properties and proving their positive association” (p. 336).

Ann Frymier (1994) conducted a research study intended to examine the relationship between teacher immediacy (verbal and nonverbal) and student learning. She was intent on examining, using path analysis, two specific hypothesized models, one which links immediacy directly with student learning and the other which links immediacy via state motivation to student learning. The primary difference in the two models examined by Frymier is that one model examines direct learning and the other, learning mediated through motivation. The results of Frymier (1994) indicated substantial support for the motivation model of student learning.

Frymier (1994) examined the motivational link between immediacy and student learning. Based on the idea that, “State motivation is highly influenced by the situation and can vary from time to time,” Frymier (1994, p. 135) felt there was ample justification for a direct connection between teacher immediacy and student state motivation. Frymier concluded that the data support student state motivation as a mediating variable between teacher immediacy and student learning. Frymier (1994) stated that, “The situational factors of teacher nonverbal and verbal immediacy behaviors seem to have a greater impact on state motivation to study for a particular class than does trait motivation” (p. 141).

Based on her research, Frymier believed teacher immediacy (verbal and nonverbal) directly influenced student motivation in three distinct ways. Frymier (1994) utilized Keller’s (1983, 1987) model of motivation termed ARCS. The ARCS model of
motivation contains four major conditions for student motivation: A—attention, also referred to as interest, R—relevance, C—confidence, also referred to as expectancy, and S—satisfaction. Frymier (1994) believed that teacher immediacy addressed three of the four elements of the ARCS model: attention, expectancy, confidence, and satisfaction. In regards to attention, Frymier (1994) stated, “Immediate teachers move about the classroom, make eye contact, use vocal variety, and call students by name, all of which are attention getting” (pp. 141-142). Frymier (1994) believed that immediacy behaviors may help to build positive expectations in students as indicated by, “. . . the positive correlations between verbal and nonverbal immediacy and students’ willingness to take another class in the same content area or with the same teacher (r = 0.34 and r = 0.31 respectively)” (p.142). Frymier (1994) stated, “In regards to satisfaction, students with an immediate teacher are likely to be more satisfied with the learning experience than those students with a low immediate teacher” (p. 142). Based on the results of her research, Frymier (1994) concluded:

Therefore, immediacy appears to serve as an attention-getter which is why Kelley and Gorham (1988) successfully increased recall with an immediate presenter. Immediacy also serves to build positive expectations in students and increase students’ satisfaction with the class, resulting in more motivated students. (p. 142)

Frymier and Houser (2000) examined, with great depth, the teacher-student interpersonal relationship. Frymier and Houser (2000) discovered correlations of 0.38 between teacher nonverbal immediacy and state motivation, and correlations of 0.45 between verbal immediacy and state motivation. The research indicated verbal immediacy was a significant predictor of student learning and motivation (Frymier & Houser, 2000).
Richmond (1990) conducted research to examine the use of behavior altering techniques, teacher immediacy, and student motivation. While the majority of the information discovered does not pertain to the present literature review, Richmond discovered and highlighted data linking motivation and teacher immediacy. Richmond (1990) documented a relationship between motivation and immediacy (verbal and nonverbal) which yielded a 0.38 association. Richmond stated that, “These results indicate immediacy behaviors may account for between 14 and 21 percent of the variance in student motivation. Vocal variety, smiling, and eye contact appear to be the major contributors to the relationship” (p. 189).

Based on prior research, Gorham and Christophel (1992) and Christophel and Gorham (1995) felt the need to step back from a basic immediacy-student motivation perspective and examine both student motivation factors and student demotivation factors. This approach represented a substantial break from the prevalent trait-state paradigm.

Christophel and Gorham (1995) and Gorham and Christophel (1992) attempted to specifically differentiate between sources of motivation and sources of demotivation. The authors struggled with the past and current implied meaning of significant correlations between nonverbal immediacy and student motivation. Christophel and Gorham (1995) stated that, “A significant correlation suggests that absence of the independent variable will lead to lack of motivation; however, not being motivated is conceptually different from being demotivated” (p. 294).

Gorham and Christophel (1992) conducted a study examining student perceived sources of motivation and demotivation in college classrooms. In terms of motivation, the most frequently listed motivator, according to Gorham and Christophel (1992), was:
Interest in and perceived relevance of the material [followed by:] teacher’s effectiveness and enthusiasm in lecturing, . . . grade or credit motivation, . . . teacher’s use of student-centered behaviors, . . . positive responses to the organization of the course and material, . . . opportunity to participate and feedback from the instructor, . . . personal achievement motivation, . . . and teacher competence/knowledge. (p. 245)

The eight categories of motivators listed by Gorham and Christophel (1992) accounted for 74% of the total motivators listed by the students.

In regards to demotivation, Gorham and Christophel (1992) discovered seven predominant categories which accounted for 76% of student perceived demotivators. According to Gorham and Christophel (1992), the seven greatest demotivation categories, listed from highest lowest were:

. . . Teacher’s boring or confusing students . . . dissatisfaction with grading and assignments, . . . negative responses to the organization of the course . . . teacher’s attitude toward students . . . dislike or perceived lack of relevance of the subject area . . . time of day, length of class, and personal factors . . . and teacher’s physical appearance. (p. 246)

Gorham and Christophel (1992) noted two matched motivation/demotivation pairs of particular descriptive value to understanding the possible implications between teacher immediacy (behaviors) and student motivation/demotivation. Gorham and Christophel (1992) stated:

The teacher’s effectiveness and enthusiasm in lecturing ranked second as a motivator, while lack of the same ranked first as a demotivator. The teacher’s positive or negative attitude toward students, and the behaviors communicating that attitude, ranked fourth as both a motivator and a demotivator. (p. 247)

Gorham and Christophel (1992) discovered that 44% of student motivators and 43% of student demotivators referenced teacher behaviors. Specifically, teacher verbal immediacy behaviors accounted for 34% of the overall motivators, while teacher
nonverbal immediacy behaviors accounted for 32% of the overall demotivators (Gorham & Christophel, 1992).

Based on their research of student-perceived motivators and demotivators, Gorham and Christophel (1992) concluded that, “... motivation is perceived by students as a student-owned state, while lack of motivation is perceived as a teacher-owned problem” (p. 250). Thus, according to students, teachers possess the ability, through the manifestation of certain behaviors, to significantly demotivate. Research examining the impact of teacher immediacy on student motivation has the ability to identify and address possible sources of student motivation and demotivation.

Following the Gorham and Christophel (1992) study, Christophel and Gorham (1995) conducted a follow-up study. Christophel and Gorham (1995), in an effort to measure student motivation and demotivation, asked two open ended questions. “... (a) What things motivate you in trying to do your best in the specific class you referenced above, and (b) What things decrease your motivation to try to do your best in the specific class you referenced above?” (p. 296) Student responses were then coded and categorized into three categories: context factors (like or dislike of subject, time of day, length of class, etc.), structure/format factors (organization, class materials, grading, assignments, etc.), and teacher behavior factors (speaking clearly, sense of humor, demonstrating interest in the students, accessibility, approachability, etc.). To assess motivation and demotivation, Christophel and Gorham (1995) used a test-retest design where student perceptions were solicited during the 3-4th week and 12-13th week of classes.

During the first administration (week 3-4) students provided 64% context
motivators, 23% teacher behavior motivators, and 14% structure/format motivators (Christophel & Gorham, 1995). By contrast, the participants also supplied demotivators which were broken down into 39% context, 37% teacher, and 25% structure/format. Christophel and Gorham (1995) suggested that context factors—conditions antecedent to teacher influence (like or dislike of subject, general desire to do well, personal laziness, time of day, length of class, etc), are largely perceived as student-owned sources of motivation or demotivation. On the other hand, structure/format and teacher behaviors were largely considered to be teacher-owned sources of motivation or demotivation (Christophel & Gorham, 1995). The results of the Christophel and Gorham (1995) study indicated that nearly two-thirds of student-perceived sources of motivation were student-owned, while approximately two-thirds of the sources of demotivation were teacher-owned. The correlations between immediacy and state motivation were significant at the first test (week 3-4) (verbal immediacy $r = .487$, nonverbal immediacy $r = .230$, $p < .0001$), and the second test (weeks 12-13) (verbal immediacy $r = .525$, nonverbal immediacy $r = .439$, $p < .0001$).

The results of the Christophel and Gorham (1995) study revealed that students tend to associate motivational factors with course aspects perceived to be under personal control and demotivation factors, associated with teacher behaviors, perceived to be entirely under the control of the teacher. While the specific motivational and demotivational factors are not pertinent to the research at hand, the fact that teacher behaviors may be viewed as demotivational is of particular interest. If students perceive teacher immediacy behaviors as sources of possible demotivation, then research focused on determining the interaction between teacher immediacy and student motivation is
A 2006 study by McCroskey, Richmond, and Bennett attempted to examine the relationship between student end-of-class motivation and teacher immediacy (communication) behaviors. McCroskey, Richmond and Bennett (2006) discovered, “When teachers communicate information clearly, engage in nonverbal immediacy behaviors, and respond assertively and responsively, students become more motivated to study” (p. 409). The multiple correlation between teacher communication behaviors and student motivation was 0.65, indicating “. . . that these teacher behaviors collectively predict 42 percent of the variance in student motivation” (McCroskey, Richmond & Bennett, 2006, p. 409).

Pogue and AhYun (2006) researched the specific effects of nonverbal immediacy and credibility on student motivation and affective learning. The most pertinent finding to this research indicated that students tend to be motivated by highly immediate, highly credible teachers. While this was not a surprising result, it does lend further credibility to the existence of a specific link between nonverbal immediacy and student motivation (Pogue & AhYun, 2006).

Allen, Witt and Wheeless (2006) conducted a meta-analysis examining teacher immediacy as a motivational factor in student learning. While the bulk of their article details the connection between immediacy and cognitive learning, Allen, Witt and Wheeless (2006) do consider affective learning as a motivational mediator between teacher immediacy and cognitive learning. The model presented by Allen, Witt, and Wheeless (2006) provides, “. . . a theoretical system where teacher behavior creates a motivational affective outcome that subsequently contributes to the generation of a
cognitive outcome” (p. 26). The results of the research of Allen, Witt and Wheeless (2006) support the model of teacher immediacy influencing student motivational affective learning and subsequent cognitive learning. Allen, Witt and Wheeless (2006) stated that, “The research outcome in this report continues to justify attention to teacher immediacy as an aspect of classroom behavior that can improve learning outcomes by increasing student motivation” (p. 28).

Teacher immediacy and demographic variables

Various potential variables which effect teacher immediacy (verbal and nonverbal) have been identified through immediacy research. As a general rule, extraneous, often personological, variables have a relatively small relationship with teacher immediacy. However, as previously mentioned, a review of literature indicated a lack of studies examining specific types of student motivation. The researcher was intent on re-examining demographic variables in light of the specific student motivation theories of self-efficacy and task value. The research questions which guided the present study addressed the possible interaction between teacher immediacy and demographic variables; therefore, a review of pertinent literature was appropriate.

Allen, Witt, and Wheeless (2006) in their meta-analysis of teacher immediacy, discussed the possibility that the influence of teacher immediacy may be greater for younger college students. Referring to the results of the meta-analysis of teacher immediacy, Allen, Witt and Wheeless (2006) stated, “What this possibly implies is that the impact of motivation may be crucial for entering students at the freshman level, but less important to a declared and dedicated major taking a course as a junior or senior” (p. 52).
Gorham (1988) examined immediacy while considering student gender, class size, and whether or not the class was in the students intended major. Gorham (1988) discovered that class size appears to impact verbal and nonverbal immediacy scores. Gorham (1988) specifically stated, “Verbal immediacy appears to drop sharply as a function of class size while nonverbal immediacy seems to be comparatively unaffected” (p. 46). The results of Gorham (1988) revealed a nonsignificant difference in immediacy based on teacher gender and whether or not the class was in a student’s major.

Gorham (1988) went on to further examine teacher immediacy, variable by variable, and compare individual items to class size and teacher gender. Findings indicated there were groupings of individual items that were positively affected by class size and groups that appeared unaffected by class size. Gorham (1988) reported that, “. . . the importance of humor; teacher conversations with individual students before, after, or outside of class; feedback; invitations for students to telephone or meet with the teacher outside of class; and praise were relatively consistent across enrollments [class size]” (pp. 49-50). Surprisingly, there were sets of teacher behaviors that tended to increase with class size. These behaviors included, “. . . teacher self-disclosure, asking questions or encouraging students to talk, and referring to class as ‘our’ class or what ‘we’ are doing. . . . addressing students by name and asking questions that solicit student viewpoints or opinions. . . .” (p. 50). The results prompted Gorham to consider why certain aspects of immediacy increase with class size. Gorham (1988) stated that:

As class size increases, however, teachers become more differentiated in terms of their efforts to decrease psychological distance. A similar pattern emerges for nonverbal immediacy behaviors. Eye contact, smiling and
vocal expressiveness are important teacher behaviors regardless of class size, whereas gesturing, smiling at individual students, relaxed body position, and movement around the classroom become more important factors as class size increases (p. 51).

Class size, in general, appears to influence the amount of variance accounted for by verbal and nonverbal immediacy. Gorham (1988) found that as class size increases, there is a slight increase in variance accounted for by verbal and nonverbal immediacy.

Regarding the relationship between gender and immediacy, very little research is available. Gender is often included as a demographic variable in immediacy research yet, based on lack of significance, is rarely included or discussed in the findings. Frymier and Houser (2000) conducted a study examining the interpersonal relationship between teacher and student as a function of 10 communication type variables. As part of their study, Frymier and Houser briefly examined the relationship between immediacy and gender. In terms of verbal immediacy, female students evidenced a 0.47 correlation with state motivation. Male students, on the other hand, evidenced a 0.38 correlation with motivation. The same pattern continues when examining nonverbal immediacy. Female students evidenced a 0.39 correlation with state motivation, and male students showed a 0.33 correlation (Frymier & Houser, 2000). When comparing the mean scores based on gender, Frymier and Houser stated that, “Females consistently viewed the communication skills and immediacy behaviors as more important than did males” (p. 213). Frymier and Houser (2000) then proceeded to compare correlations using a Fisher’s z transformation and discovered that there appeared to be no statistically significant differences between male and female perceptions of immediacy.

Menzel and Carrell (1999) examined gender, immediacy, student willingness to
talk, and perceived learning. Unlike the previously mentioned study, Menzel and Carrell decided to examine both instructor gender and student gender. The results of the Menzel and Carrell (1999) research indicated a significant interaction between student gender and instructor gender. Male students had a tendency to perceive greater learning from male professors and female students perceived greater learning from female instructors. In addition, student gender and levels of instructor nonverbal immediacy displayed a statistically significant (p <.02) interaction as well. Menzel and Carrell (1999) analyzed immediacy, perceived learning, and willingness to talk, yet they found that verbal immediacy, “. . . alone explained more variance than other main and interaction effects analyzed. . .” (p. 37). Verbal immediacy appeared to be stronger predictor of perceived learning and willingness to talk than student and instructor gender. Menzel and Carrell (1999) stated that, “In a three way analysis of perceived learning with immediacy considered along with student gender and instructor gender, the gender effect was to a great extent mediated by variance in instructor verbal immediacy behavior (ω² = .04)” (p. 37). While, in general, male students reported learning more from male instructors and female students reported learning more from female instructors, neither instructor gender nor student gender appeared to have a statistically significant effect on immediacy.

Immediacy is an important component of the classroom environment, and is directed towards low inference instructor behaviors. Self-determination theory, and the concept of teachers as either autonomy-supportive or controlling, focuses on a broader high inference measure of general classroom climate. As a result, both theories are combined and utilized to capture a vibrant picture of the instructors’ role in the establishment of a classroom climate.
Theory of Self-Determination

Self-Determination Theory (SDT) is a macro-theory of human motivation dealing primarily with the development of personality within social contexts (Deci & Ryan, 2007). Deci and Ryan (2007) describe SDT as a theory which, “. . . focuses on the degree to which human behaviors are volitional or self-determined -- that is, the degree to which people endorse their actions at the highest level of reflection and engage in the actions with a full sense of self choice” (p. 1). Self-determination, as a theory, focuses on the experience of choice with an emphasis on an internally perceived locus of control. Deci and Ryan (1985) stated that, “. . . self-determination is the capacity to choose and to have those choices, rather than reinforcement contingencies, drives, or any other forces or pressures, be the determinants of one’s actions” (p. 38). Self-determination theory focuses on an individual’s autonomy and perceived freedom in relation to a given social or situational context. According to Deci, Vallerand, Pelletier, and Ryan (1991):

A central hypothesis of self-determination theory is that social contexts that support people’s being competent, related, and autonomous will promote intentional (i.e., motivated) action, and furthermore, that support for autonomy in particular will facilitate that motivated action’s being self-determined (rather than controlled). (pp. 332-333)

Self-determination theory is macro-theory comprised of four different mini-theories. Figure 2.8 briefly details the four mini-theories of self-determination theory.
Self-Determination

Cognitive Evaluation Theory
“. . . formulated to describe the effects of social contexts on people’s intrinsic motivation” (Deci & Ryan, 2002, p. 9)
Describes elements as:
- Autonomy-supportive (informational)
- Controlling
- Amotivating

Organismic Integration Theory
“. . . formulated to explain the development and dynamics of extrinsic motivation; the degree to which individuals’ experience autonomy while engaging in extrinsically motivated behaviors” (Deci & Ryan, 2002, p. 9)

Causality Orientations Theory
“. . . formulated to describe individual differences in people’s tendencies to orient toward the social environment in ways that support their own autonomy, control their behavior, or are amotivating” (Deci & Ryan, 2002, p. 10)

Basic Needs Theory
“. . . formulated to explain the relation of motivation and goals to health and well-being, . . . by describing associations . . . to psychological health across time, gender, situations and culture” (Deci & Ryan, 2002, p. 10)

Figure 2.8: Four mini-theories of Self-Determination Theory (Deci & Ryan, 2002)
While the four mini-theories are of importance to understanding SDT, this research is intended to specifically address the autonomy related to social contexts as supported by the cognitive evaluation theory. For additional information concerning the intricacies of Organismic Integration Theory, Causality Orientations Theory and Basic Needs Theory, refer to Deci and Ryan (2002).

*Cognitive Evaluation Theory*

Cognitive Evaluation Theory (CET), at its inception, was intended to account for reward effects on intrinsic motivation. According to Deci and Ryan (2002), the CET suggests:

. . . that the needs for competence and autonomy are integrally involved in intrinsic motivation and that contextual events, such as the offer of a reward, the provision of positive feedback, or the imposition of a deadline, are likely to affect intrinsic motivation to the extent that they are experienced as supporting versus thwarting satisfaction of these needs. (p. 11)

Simply stated, contextual events have the opportunity to either negatively or positively affect intrinsic motivation. Deci and Ryan (2002) suggest *perceived locus of causality* and *perceived competence* as two primary cognitive processes through which contextual factors influence intrinsic motivation.

Perceived locus of causality relates to an individual’s need for autonomy and the subsequent effects on intrinsic motivation (Deci & Ryan, 2002). Deci and Ryan (2002) stated that, “. . .when an event prompts a change in perceptions toward a more external locus, intrinsic motivation is undermined; whereas, when an event prompts a change toward a more internal perceived locus, intrinsic motivation will be enhanced” (p. 11).
From a practical perspective, environments that support autonomy are those which tend to enhance intrinsic motivation.

Perceived competence is just as it sounds. When an event increases perceived competence in an area, the individual is more likely to be intrinsically motivated by a task. Whereas, when an event undermines perceived competence, the individual is likely to evidence diminished intrinsic motivation (Deci & Ryan, 2002).

The CET combines both perceived locus of causality (autonomy) and perceived competence in relation to intrinsic motivation. Deci and Ryan (2002) stated that, “According to CET, however, positive feedback is predicted to enhance intrinsic motivation only when people feel a sense of autonomy with respect to the activity for which they perceived themselves to be competent. . .” (p.11). The influential role of autonomy in the enhancement of intrinsic motivation is of paramount importance to the Cognitive Evaluation Theory.

The CET, along with an emphasis on perceived locus of causality and perceived competence, also focuses, quite extensively, on the contextual events or climates that impact intrinsic motivation. According to the CET, the contextual events contain controlling aspects and informational aspects. Deci and Ryan (2002), in regards to controlling and informational aspects, stated that, “. . . it is the relative salience of these two aspects of social contexts that determines the effects of the context on perceptions of causality and competence, and thus on intrinsic motivation” (p.12). A more controlling atmosphere is likely to shift pressure toward specific outcomes, thus shifting towards a more externally perceived locus of control (Deci & Ryan, 2002). On the other hand, an
autonomous or informational environment is likely to foster an internally perceived locus of control, and thus, shift an individual’s motivation in an intrinsic direction.

In summary, the contextual and atmospheric conditions of an event, whether controlling or informational, have the ability to direct an individual’s motivation in either an intrinsic or extrinsic direction. Deci and Ryan (2002) stated that, “. . . CET holds that self-controlling forms of regulation will be associated with diminished intrinsic motivation, whereas more autonomous forms of self-regulation will maintain or enhance intrinsic motivation” (p. 13). An informational (autonomy supporting) atmosphere has the ability to shift towards an internal perceived locus of causality, and thus increase intrinsic motivation (Deci & Ryan, 2002).

Self-Determination and Student Autonomy

Self-determination theory focuses on an individual’s autonomy and perceived freedom in relation to a given social or situational context. Deci and Ryan (1985) stated, “. . . self-determination is the capacity to choose and to have those choices, rather than reinforcement contingencies, drives, or any other forces or pressures, be the determinants of one’s actions” (p. 38). According to the Cognitive Evaluation Theory (CET) espoused by self-determination, students engaged in an autonomy-supportive environment will have increased intrinsic motivation. Whereas if students are in a more controlling classroom atmosphere, they are likely to experience pressure toward specific outcomes, and shift their motivational schema towards a more externally perceived locus of control (Deci & Ryan, 2002).
An autonomous classroom climate is established by an autonomy-supportive instructor. Subsequently, the classroom climate created by a controlling teacher undermines student autonomy, thereby negatively influencing student motivation. Immediacy and classroom climate share several theoretical and practical similarities. Immediacy is very much contextually driven, as is student autonomy. Immediacy tends to measure low inference (specific behaviors) while autonomy assesses the overall classroom climate. Both are highly influenced by the instructor, and both contain theoretical and practical implications for student motivation (Deci & Ryan, 2002).

It is important to understand the terminology associated with autonomy. First, classroom climate (in this case measured directly by the Williams and Deci Learning Climate Questionnaire) is a measure of how the students feel in a given classroom. The students are asked to assess feelings such as, how they feel about an instructor, the choices or options they are provided, and whether they feel cared for or understood by the instructor. Second, classroom climate is a theoretical manifestation of the student perceived autonomy. Students can be both autonomously motivated and have autonomy-supportive teachers. However, the preceding two terms do not have to be mutually exclusive. Students can feel autonomously motivated yet subside in a classroom with an autonomy-supportive or unsupportive teacher. Students may feel autonomously motivated based on previous course experiences, personal competence or intrinsic belief in their own ability to succeed. Instructors have the ability to greatly influence student autonomy (Deci, Vallerand, Pelletier, & Ryan, 1991). The following section explores the literature related to autonomy-supportive instructors and the benefits of autonomously motivated students.
Benefits of autonomy-supportive climates

Over the years since Deci and Ryan first developed the Theory of Self-Determination, researchers have attempted to directly identify specific behaviors utilized by autonomy-supportive teachers. In the last few years, their efforts have paid off. Several studies which examine the benefits of autonomy-supportive teachers will be discussed.

According to Reeve (2002), autonomy-supportive teachers are those who, in interactions with students, “. . . are responsive (e.g., spend time listening), supportive (e.g., praise the quality of performance), flexible (e.g., give students time to work in their own way), and motivate through interest (e.g., support intrinsic motivation)” (p. 186). Conversely, controlling teachers tend to “. . . take charge (e.g., hold the instructional materials, use directives/commands), shape students toward a right answer (e.g., give solutions), evaluate (e.g., criticize), and motivate through pressure (e.g., seem demanding and controlling)” (Reeve, 2002, p. 186).

Deci, Vallerand, Pelletier and Ryan (1991), in their review of motivation and education, found that teachers who employ a more controlling style tend to be correlated with greater anxiety and poor coping among students. Controlling teachers, in general, limit the ability of students to function autonomously in the classroom. As a result, students tend to assume passive, cognitively disconnected, extrinsically motivated classroom roles (Reeve, 2002).

Reeve, Bolt, and Cai (1999) conducted a three part study examining autonomy-supportive teachers and the manner in which they teach and motivate. The hypothesis of
the Reeve, Bolt and Cai (1999) research was that autonomy-supportive instructors would tend to display student-centered conversational approaches, nondirective utterances (raising questions as opposed to giving commands), and a flexible interpersonal style that develops student autonomy. Results indicated that autonomy-supportive instructors were more likely to listen to the students and less likely to hold or possess the instructional materials (Reeve, Bolt, & Cai, 1999). In addition, autonomy-supportive teachers were more likely to ask about the students’ wants, respond to student generated questions and volunteer prospective-taking statements. Controlling teachers were likely to use directives (commands) and reveal the answer or problem to the solution (Reeve, Bolt, & Cai, 1999). Furthermore, in the case of the Reeve, Bolt, and Cai (1999) study, students with autonomy-supportive instructors tended to outperform students with controlling instructors on problem solving, puzzle type activities. In summary of the second component of their three part research, Reeve, Bolt and Cai (1999) stated:

Compared with their relatively controlling counterparts, autonomy-supportive teachers listened more, held the instructional materials less, resisted giving the puzzle’s solutions, and supported the student’s intrinsic motivation and internalization. Autonomy-supportive teachers also showed a tendency to verbalize fewer directives, ask more questions about what the student wanted to do, respond more to student-generated questions, and volunteer more perspective-taking statements. (p. 542)

Reeve, Bolt and Cai (1999) also examined the perceived influencer of autonomy-supportive instructors. Based on their research and extant theory, two distinct influences emerged, namely, situational pressure and personality based dispositional influencers. In other words, there appear to be two main dimensions which influence the autonomy-support of an instructor. Situationally pressured teachers tend to assume a more controlling role where, according to Reeve, Bolt, and Cai (1999), they “. . . talked more,
communicated with should statements, used frequent praise and criticism, asked controlling questions, stated deadlines, and generally created an atmosphere characterized by pressure” (p. 546). Teachers identified as possessing a more dispositional personality towards autonomy-support, “. . . listened more, encouraged student initiative with the instructional materials, asked questions about the student’s wants, replied to questions, and offered empathetic perspective-taking statements” (Reeve, Bolt, & Cai, 1999, p. 546).

One common concern regarding the issue of autonomy in the classroom is that autonomy-supportive teachers may be viewed as mere passive conduits in the learning process. Reeve, Bolt and Cai (1999) concluded that teachers who were autonomy-supportive were far from passive, rather, they were rated by observers as being significantly more enthusiastic during instruction than their controlling counterparts. Reeve, Bolt, and Cai (1999) stated, “. . . our findings lead us to conclude that these teachers invested their attention and effort in a qualitatively different way and with a qualitatively different purpose than did the controlling teachers” (p. 547). Autonomy-supportive teachers engaged in much the same behavior (enthusiastic, not passive) as controlling instructors; the difference, according to Reeve, Bolt, and Cai (1999) was that autonomy-supportive instructors seek the students’ initiative by supporting the student’s intrinsic motivation. Controlling teachers, on the other hand, seek to mandate student compliance by instilling consequences and verbal directives.

If a teacher is autonomous does that mean that they remove all classroom structure and passively baby-sit their students? Reeve (2002) addressed this all too common question regarding autonomy-supportive teachers. Reeve sharply distinguished providing freedom for the students to pursue their own agendas (autonomy), and
providing structure by giving the students clear expectations, optimal challenges and timely informative feedback. Reeve recognizes that autonomy support is often misconstrued as laziness, permissiveness, or a laissez-faire attitude. However, he argues that classroom autonomy and structure are two entirely different variables that are complimentary and mutually supportive (Reeve, 2002). Each variable is essential to a classroom environment, and students appear to function best in a structured environment supportive of student-autonomy. Structure focuses on the procedural elements of the classroom environment while autonomy seeks to stimulate within students an intrinsic desire to learn, manifest by increased student engagement. Autonomy-supportive classrooms seek to increase student engagement, involvement, and effort through the development of an interactive, interpersonal relationship between the teacher and the students. The student-teacher relationship is rich in autonomy-support when built upon a foundation of classroom structure (Reeve, 2002). Structure and autonomy-support work together to promote a safe, secure, challenging, and student-centered learning environment.

Research conducted by Stefanou, Perencevich, DiCintio, and Turner (2004) added a unique perspective to autonomy-support. Stefanou et al. (2004) believed that, based on studies by Assor, Kaplan, and Roth (2002), choice is an essential component of autonomy-supportive environments. However, choice alone was not enough to maximize the student benefit of autonomous environments. According to Stefanou et al. (2004), students may be provided procedural or organizational choices that have little if any significance to student learning. Stefanou et al. emphasized that teachers need to focus on the cognitive supporting aspects of autonomy in order to promote conditions
conducive to a deep level of student engagement in learning (2004). Stefanou et al.
(2004) defined three distinct types of autonomy support: organizational, procedural and
cognitive. Teachers often engage in organizational support which allows students control
over certain environmental conditions such as class rules or choosing assignment due
dates. A second type of autonomy support proffered by Stefanou et al. (2004) is
procedural support. Procedural support can take the form of offering students the
opportunity to determine the type of media with which to complete a class assignment.
An example of this would include a student determining to draw a picture to represent a
specific science concept (Stefanou et al., 2004). The third, and according to Stefanou et
al., the most important type of autonomy-support, is cognitive autonomy. Cognitive
autonomy encourages student ownership in the learning process, encompassing teacher
behaviors which allow students the freedom to generate their own solution paths and
argue or justify their point (Stefanou et al., 2004). In order to further establish a basis for
the importance of cognitive autonomy, Stefanou et al. (2004) stated, “Moreover, we
suggest that organizational and procedural autonomy support may be superficially
engaging, whereas cognitive autonomy support may have more long-lasting effects on
engagement and motivation” (p. 105).

Deci et al. (1991) concluded that autonomy-supportive teachers have the ability to
promote intrinsic interest and motivation within students. Instrumental adults (parents,
teachers, mentors) who promote autonomy-supportive environments for students will
allow students the opportunity to retain their natural curiosity and promote their intrinsic
supports for autonomy, suggested, “. . . offering choice, minimizing controls,
acknowledging feelings, and making available information that is needed for decision making and for performing the target task” (p. 342).

Deci et al. (1982), conducted a study to determine the differences between informational (autonomy-supportive) and controlling teachers. The results indicated that more controlling teachers tended to talk more (and in a controlling manner), make twice as many utterances in a 20-minute period, and spend slightly more than twice as many seconds talking (Deci et al. 1982). In addition, controlling teachers allowed students to work alone much less, gave three times as many directives, made three times as many should-type statements, and asked nearly twice as many controlling questions. One surprising finding by Deci et al. (1982), was that controlling teachers tend to praise their students slightly more than informational (autonomy-supportive) teachers. Deci et al. speculated that, since this praise was also coupled with increased verbal criticism, controlling teachers may have been using praise as simply another means to control student behavior and time on task (1982).

According to Deci et al., the students of controlling teachers solved more puzzles (in this case the dependant outcome) than students of autonomy-supportive teachers. The difference was controlling teachers tend to read the solutions of the problems to the students, while the autonomy-supportive teachers asked leading questions and suggested options for the students.

Benefits of autonomously motivated students

Research supports many benefits of autonomously motivated students. Studies by Vallerand (1991), and Vallerand and Bissonnette (1992) indicated that students who
evidenced a higher degree of self-determined motivation (more autonomous) had a greater likelihood of remaining in school than those students who experienced less self-determined motivation. Pintrich and DeGroot (1990) linked autonomously motivated students with greater academic performance and increased intrinsic motivation; and Miserandino (1996) found that autonomously motivated students tend to be more curious, participate in, and enjoy school tasks.

Benware and Deci (1984), in a study designed to explore self-determination in college students, reported that students who learn information for the sake of use, tended to report more intrinsic motivation than those who learn information simply because they were required to learn the content.

Reeve et al. (1999) designed a research study to examine the utility of individual autonomy-supportive behaviors. Based on prior research, it could reasonably be concluded that autonomous teachers promote beneficial student attributes, attitudes and motivation. The question, which Reeve et al. (1999) sought to answer, is exactly how and why students benefit from autonomous environments. Reeve scored teachers based on 22 different behaviors hypothesized to affect autonomy. The results of the study indicated several specific behaviors which appeared to directly support autonomy in students. Teacher instructional behaviors which exerted a significant influence on student feelings of autonomy included: time spent talking and time given to students for independent work. Teacher conversational behaviors which significantly influenced student autonomy included: praises of quality of performance, questions of what the student wants, responses to student-generated questions and empathetic, perspective-taking statements. Furthermore, the raters of teacher behaviors also rated certain teachers
as supportive of intrinsic motivation and internalization. Not coincidentally, these teachers scored significantly higher on their ratings of autonomy-supportive (Reeve et al., 1999). The results of the Reeve et al. (1999) study corroborate similar results (in some cases identical results) from an earlier study conducted by Deci et al. (1982).

Reeve (2002) summarized the results of self-determination research and, in reference to the impact of instructional behaviors (i.e. what the teacher did) on students, stated:

Students reported significantly higher perceptions of both self-determination and competence when teachers listened more, encouraged conversation, allocated time for independent work, and held the instructional materials less. As to the conversational statements (i.e. what the teacher said), students reported significantly higher perceptions of competence when their teachers provided hints but resisted giving answers. Students also felt more competent when teachers voiced perspective-taking statements. (p. 188)

Reeve (2002) indicated that behaviors such as listening and allowing students to work independently appear to nurture autonomy. Students tend to feel competent when they are allowed opportunities for input, creativity and personal expression (Reeve, 2002).

Autonomy-supportive environments tend to foster autonomously motivated students. Students who are autonomously motivated, according to Grolnick, Ryan and Deci (1991), report increased motivation to complete schoolwork, evidence greater conceptual learning, and greater memory retention. Students who have greater intrinsic motivation and self-determination often show more positive emotions in the classroom, more enjoyment of academic work, and more overall school satisfaction (Deci et al. 1991).
Students who perceived their instructors to be more autonomously supportive tend to be more positively associated with self-determined forms of motivation—intrinsic and identified self-regulation (Deci et al. 1991). On the other hand, student feelings of being controlled, “. . . generally were associated with amotivation, such that a greater sense of being controlled was linked with greater feelings of amotivation” (Noels, Clement, & Pelletier, 1999, p.29).

Miserandino (1996) examined the impact of intrinsic or internal motivation in students. Based on her research, Miserandino (1996) stated that, “Results indicate that students who perceived that they engaged in schoolwork for internal reasons reported more involvement, persistence, participation, and curiosity of school activities than did students who perceived themselves as externally motivated” (p. 207). In contrast, students who report more external motivation tended to feel more angry, anxious and bored, and reported avoiding, ignoring or faking their way through certain aspects of school (Miserandino, 1996).

Black and Deci (2000) attempted to ascertain the benefits of autonomous motivation in college students and discovered that when students enter a course with increased autonomous motivation, they tended to have a more positive course experience, and displayed higher perceived competence. As student perceptions of the leader (instructor) autonomy increased, student autonomy and self-regulation increased. In essence, “Students who perceived their leaders as more autonomy-supportive performed better in the course” (Black & Deci, 2000, p.753). Black and Deci also sought to examine the impact of students’ initial autonomy at the beginning of the course, and the role of the autonomy-supportive leader in overall student performance. The results were
a little surprising in that the initial levels of student autonomy moderate, to a degree, the impact of the instructor autonomy. Black and Deci (2000) stated:

Specifically, students’ initial level of relative autonomy moderated the effects of instructor autonomy support on performance, such that students low in relative autonomy at the beginning of the course performed significantly better if they perceived their leaders as more autonomy supportive, whereas the performance of students high in relative autonomy at the beginning of the course was not affected by their perceptions of the leaders’ autonomy support. (pp. 753-754)

Researchers draw a comparison between being autonomy-supportive and student-centered. Black and Deci (2000) stated, “One can see that being autonomously supportive (rather than controlling) in an educational setting is essentially what is typically meant by being student-centered. . . .” (p.742). In a sense, both terms encompass aspects of the classroom environment or climate. Allowing student autonomy requires understanding the student perspective and being empathetic to the learner. Teachers who evidence such behavior are well on their way to developing student-centered classrooms.

Teachers have the opportunity to shape the classroom climate in a manner which either supports or undermines student autonomy. According to Deci et al.(1982) and Reeve et al.(1999), teachers can learn specific low inference tactics to improve and increase student autonomy. Course instructors hold a very influential position in the creation of classroom climate (Deci et al., 1991). When considering the instrumental role of an educator in the lives of students, it is imperative to recognize that, “. . . the more we try to control and pressure learning from without, the more we obstruct the tendencies of students to be actively involved and to participate in their own education” (Ryan & Stiller, 1991, p. 117).
Relationship between Immediacy Theory and Self-Determination

In essence, immediacy is a measure of specific instructor behaviors that have a perceived effect on the relationship with the learner. Self-determination, on the other hand, focuses heavily on contextual factors associated with social environments. Specifically, the student perceived autonomy that results from instructor interaction.

Both immediacy and self-determination are directly related to instructor behaviors. Immediacy focuses on specific task-related, low inference type determinants. Examples would include: humor, eye contact, body positioning, smiling, calling students by name, etc. Many of the aspects of immediacy are readily observable, thus the designation as low-inference variables.

Self-determination, as measured by the Learning Climate Questionnaire (LCQ) (Williams & Deci, 1996) is a more general or high-inference measure of classroom climate. Immediacy reflects specific instructor actions, while the LCQ addresses an overall classroom atmosphere or climate.

At its core, according to Deci, Vallerand, Pelletier, and Ryan (1991), self-determination is founded on the belief that:

People are inherently motivated (out of three basic needs [competence, relatedness and autonomy]) to internalize and integrate within themselves the regulation of uninteresting activities that are useful for effective functioning in the social world and . . . that the extent to which the process of internalization and integration proceeds effectively is a function of the social context. (pp. 328-329)

According to Deci, Vallerand, Pelletier, and Ryan (1991), competence, relatedness and autonomy are supported by a teacher’s interpersonal context. A teachers
autonomy-supportive versus controlling style appears to be mediated by interpersonal contexts. When addressing the relationship between autonomy influences and interpersonal style of the instructor, Deci, Vallerand, Pelletier, and Ryan (1991) stated, “They [previous studies] also show that the interpersonal context, as operationalized by the experimenter’s interpersonal style, can moderate the effects of specific external events” (p. 334). According to Deci, Vallerand, Pelletier, and Ryan (1991), the effects of specific events may differ, “. . . depending on whether the experimenter administers them with an autonomy-supportive or a controlling style or intent” (p. 334).

Considering the instructor’s ability to influence the environment, Deci, Vallerand, Pelletier, and Ryan (1991) believed that interpersonal style would greatly influence student perceptions of autonomy-support or control. Referring to past research, Deci, et al. (1991) stated, “The results consistently showed that the manner of presentation was important” (p. 336). However, in order for the instructors or administrators of certain events to shape the classroom climate, Deci, et al. (1991) believed that the instructors had to possess the ability to adopt the frame of reference of the participants and present information in a manner that provided autonomy for the students.

Immediacy and autonomy are closely linked constructs that may possess the ability to influence student motivation. Both immediacy and autonomy are closely tied to the development of feelings of relatedness or closeness between the student and the instructor. Deci, Vallerand, Pelletier, and Ryan (1991) reviewed research related to autonomy and concluded that the research, “. . . suggested that autonomy develops most effectively in situations where children and teenagers feel a sense of relatedness and closeness to, rather than disaffiliation from, significant adults” (pp. 339-340). One of the
areas that focuses on interpersonal contexts and feelings of relatedness is teacher immediacy.

The intent of the present research was to examine the classroom environment by considering the independent variables of verbal immediacy, nonverbal immediacy and student-autonomy. The independent variables were presumed to be related to the dependent variables of student self-efficacy and task value motivation. Self-efficacy is a motivation theory rooted in the social cognitive theory.

Social Cognitive Theory

In 1986, Albert Bandura proposed a theory that radically changed the manner in which people were previously viewed as either active or passive recipients in the motivational process. Before expounding on the Social Cognitive Theory espoused by Bandura (1986), it is necessary to briefly review the state of psychology from which Social Cognitive Theory emerged.

The manner in which people were motivated, in the early part of the 19th century, was determined to be a result of either subconscious impulses, or external environmental stimuli. Two theories, Psychodynamic and Trait Theory, emerged to support the motivation of human behavior by internal means (Bandura, 1986), and one theory, radical behaviorism, emerged to support human behavior as a simple product of external and genetic factors.

The Psychodynamic Theory of human behavior was grounded on the principle that, “. . . human behavior is the manifestation of the dynamic interplay of inner forces,
most of which operate below the level of consciousness” (Bandura, 1986, p. 2). Freud, one of the main proponents of the psychodynamic theory, believed that inner drives were the sole motivation and regulator of human behavior. Consequently, psychologists turned their attention to examining the inner drives of individuals as a means to understanding human behavior. According to Bandura (1986), the difficulty with this line of reasoning is that it fails to account for the manner in which a person’s response to the same stimulus may change based on the influences of the external environmental.

The Trait Theory of human behavior is another theory which purports a solely internal determination of behavior (Bandura, 1986). Bandura (1986) believed Trait Theory posits that, “. . . human actions are governed by traits, which are regarded as broad enduring dispositions to behave in certain ways” (p. 5). However, once again the problem of consistency emerged. Bandura (1986) stated that, “If behavior is largely the product of a disposition, then actions should be fairly consistent across situations and stable over time” (p. 5).

Skinner (1953, 1969) was largely responsible for the establishment of the radical behaviorism theory. Skinner believed that human behavior was determined, quite simply, by genetic makeup and environmental factors (Bandura, 1986). While there are elements of the behaviorism theory that appear tenable, Bandura drew issue with the fact that humans are viewed as mere pawns in the motivational process.

Bandura (1986) believed that the explanation of human behavior was much more intricate and holistic than the aforementioned theories. The basis for psychological theories of human behavior, according to Bandura (1986), can be found in how the
theorists perceive locus of agency. Figure 2.9 describes the three main conceptualizations of locus of agency.

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<th>Human agency conceptualized in three different ways</th>
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<tr>
<td><strong>Autonomous Agency</strong></td>
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<td>Humans serve as autonomous agents in their own actions.</td>
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Figure 2.9: The three main conceptualizations of locus of agency (Bandura, 1986)

Bandura, after analyzing the predominant theories of the day, recognized that theories which focused solely on either inner determinants or external influences failed to adequately capture the motivational process of human behavior. Subsequently, Bandura (1986) posited a third locus of agency termed interactive agency. Bandura couched his interactive model under the Social Cognitive Theory of Human Development, and grounded the merits for interactive agency under the model of triadic reciprocality.
The Social Cognitive Theory, espoused by Bandura (1986), offers a way to explain human functioning, “. . . in terms of a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other” (p. 18). In an effort to lend credence to the concept of triadic reciprocality, Bandura listed five basic human abilities which he believed were essential human traits (1986). Figure 2.10 lists and elucidates the five basic human abilities.
People create symbols through everyday interaction, and utilize these symbols as internal models to guide future action (Bandura, 1986). Symbols provide opportunity for humans to, “... give meaning, form, and continuance to the experiences they have lived through” (Bandura, 1986, p. 18).

Bandura believed that people do not merely assume a reactive or passive stance to situational factors. Rather, individuals are purposive in their behavior, regulated by forethought. Forethought enables people to anticipate consequences, set goals, and plan courses of action.

Individuals have an innate capacity for learning based not on repeated personal involvement, but rather on vicarious observation of the success and failures of others. The capability of vicarious learning allows people to avoid the tedious and deleterious process of trial and error.

Human behavior and motivation is regulated by internal standards, and humans possess the capacity to assume a self-evaluative process. Self-regulatory functions are influenced by external determinants, yet the influence of the individual partly determines the outcome of the situation.

Self-reflective ability allows individuals to analyze past and present experiences and actually think about their own thought processes. The ability to self-reflect is one of the distinctively human traits which allows for the formation of judgments about our own ability to succeed in a given task.

Figure 2.10: The five basic human capabilities as espoused by Bandura (1986)
The five basic human capabilities of symbolizing, forethought, vicarious observation, self-regulation, and self-reflection necessitated within Bandura the need to develop a comprehensive theory capable of addressing the complexities of human nature. Thus, the Social Cognitive Theory of human development was born.

Bandura grounded the Social Cognitive Theory of human development on the concept of triadic reciprocal determinism. According to Pajares (2002), reciprocal determinism is the view that, “. . . (a) personal factors in the form of cognition, affect, and biological events, (b) behavior, and (c) environmental influences create interactions that result in a triadic reciprocity.” (p. 1). Figure 2.11 models the triadic reciprocity of three classes of determinants (Bandura, 1986).

![Figure 2.11: Triadic reciprocity of three classes of determinants (Bandura, 1986; Pajares, 2002)](image-url)
Bandura used the term reciprocality to describe the unique interdependent nature of the three determinants. All determinants can, and to some extent, do exert a multiplicity of influences on each other. In addition, Bandura (1986) stated that “The relative influence exerted by the three sets of interacting factors will vary for different activities, different individuals, and different circumstances” (p. 24). The practical benefit of Bandura’s reciprocal determinism allows counselors and therapists to direct efforts at either personal, behavioral, or environmental factors (Pajares, 2002). The unique acknowledgment of three important and interactive determinants evidenced a substantial philosophical break from the previous psychodynamic, trait, and behaviorist theories.

With the advent of reciprocal determinism, coupled with the five basic human capabilities, Bandura believed that individuals possess a self system which enabled them to exercise a semblance of control over their thoughts, feelings, and actions (Pajares, 1997). Pajares (2002) summarized aspects of the social cognitive theory and stated that:

In general, Bandura’s social cognitive theory provides a view of human behavior and motivation in which the beliefs that people have about themselves are key elements in the exercise of control and personal agency and in which individuals are viewed both as products and as producers of their own environments and of their social systems. (p. 8)

Once Bandura identified individuals as having and exercising control over their thoughts, feelings, and actions, he began developing a theory to address people’s beliefs in their own ability to succeed in a task. Bandura conceptualized his ideas as the Theory of Self-Efficacy (Bandura, 1986).
**Self-Efficacy**

Bandura (1986) defined self-efficacy as, “... people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It [self-efficacy] is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses” (p. 391). Self-efficacy forms the practical and useful basis for the social cognitive theory by emphasizing the interactive nature of human agency. Bandura (1997) stated:

Self-efficacy theory provides explicit guidelines on how to enable people to exercise influence over how they live their lives. A theory that can be readily used to enhance human efficacy has much greater social utility than theories that provide correlates of perceived control but have little to say about how to foster desired changes (p. 10).

Bandura espoused four distinct sources commonly used to establish self-knowledge about one’s efficacy, and subsequently, generate feelings of self-efficacy. The four principal sources from which people generate information pertaining to their self-efficacy are listed in hierarchical order from the most influential to the least influential. Bandura (1997) defined the four sources as: mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states.

**Mastery Experiences**

Bandura (1997) considered mastery experiences to be the most influential source of efficacy information because, “... they provide the most authentic evidence of whether one can muster whatever it takes to succeed” (p. 80). Success can strengthen self-efficacy beliefs, while frequent failure can weaken self-efficacy beliefs. Bandura emphasized that mastery experiences are difficult to simulate or instill in a programmed
atmosphere or environment. Rather, the ability to utilize mastery experience to augment self-efficacy involves, “. . . acquiring the cognitive, behavioral, and self-regulatory tools for creating and executing effective courses of action to manage ever-changing life circumstances” (Bandura, 1997, p. 80). Mastery experiences are able to produce stronger, more generalized, results because they involve both the conscious thought and direct actions of the individual (Bandura, 1997).

Vicarious Experience

A second method of creating and strengthening self-efficacy is through the direct observation of similar social models (Bandura, 1994). Individuals who possess a similar, or sometimes higher degree of skill or understanding, are often observed completing, or modeling a specified task or behavior. The observer, through vicarious experience, will often gain a heightened sense of personal self-efficacy. However, to achieve the highest possible self-efficacy gain, it is important for the observer to feel comparable or similar to the model (Bandura, 1997). Bandura (1994) discussed the impact of models, and stated that, “Through their behavior and expressed ways of thinking, competent models transmit knowledge and teach observers effective skills and strategies for managing environmental demands. Acquisition of better means raises perceived self-efficacy” (p. 72).

Verbal Persuasion

A third method whereby individuals gain self-efficacy is through the process of verbal persuasion. Verbal persuasion (often termed social persuasion due to the inherent
sociability of verbal situations) serves to strengthen a belief in an individual’s ability to succeed by providing positive reinforcement. Bandura (1997) believed that verbal encouragement could, to a degree, solidify the beliefs of an individual who was struggling in a given activity. Bandura (1997) stated that, “Verbal persuasion alone may be limited in its power to create enduring increases in perceived efficacy, but it can bolster self-change if the positive appraisal is within realistic bounds” (p. 101). Verbal persuasion is by no means a panacea; however, if used in a realistic manner, individuals may gain the necessary impetus to succeed. In describing the benefits of social persuasion, Bandura (1994) stated that, “People who are persuaded verbally, that they possess the capabilities to master given activities, are likely to mobilize greater effort and sustain it than if they harbor self-doubts and dwell on personal deficiencies when problems arise” (p. 72). Social persuasion is a useful adjunct to the more powerful self-efficacy influencers of mastery and vicarious experiences.

Physiological and Affective States

Individuals are able to establish, to a degree, self-efficacy information through fatigue, arousal, anxiety, stress, and mood states (Pajares, 1997). Various physiological and affective mood states allow individuals to gauge their degree of confidence in a particular activity by the, “. . . emotional state they experience as they contemplate an action” (Pajares, 2002, p. 8). Negative thoughts and fears about ones personal capabilities tend to diminish perceived self-efficacy, while positive thoughts tend to enhance self-efficacy (Pajares, 2002). Physiological and affective states serve as a potential source of self-efficacy information, yet it is important to recognize that such
states are mediated by cognitive processing. Thus, individuals past experiences, and the intensity and circumstances under which an activity is formerly or currently conducted, influence cognitive processing relative to self-efficacy.

Self-efficacy theory is based on Bandura’s Social Cognitive Theory, and this basis is of paramount importance. Individual determinations of self-efficacy information, as aided by mastery, vicarious, verbal, and physiological experiences, are sifted or screened through personal cognitive functions. In other words, individuals are responsible for the selection, integration, interpretation, and recollection of information utilized to provide a basis for self-efficacy information (Pajares, 2002). The benefit of the Social Cognitive Theory is that the theory recognizes and encourages the development of personal cognitive processes which can allow an individual to exercise, develop, and to an extent, control their personal motivational and affective states (Pajares, 2002). Self-efficacy tends to affect human functioning through cognitive, motivational, affective, and selection processes. These four processes interact in a mediational manner to influence, or be influenced by, efficacy.

Cognitive Processes

Cognitive process allows individuals to engage in purposive activities, regulated by forethought. This forethought enables individuals to set goals based on their self-appraisal of capabilities (Bandura, 1994). People constantly self-appraise their success, or perceived capability of success, and in so doing, develop and solidify perceptions of self-efficacy.
Motivational Processes

Bandura operates from the theoretical platform that most human motivation is cognitively generated (Bandura, 1994). People tend to exercise forethought to motivate and guide their actions. Bandura (1994) stated that, “Self-efficacy beliefs contribute to motivation in several ways: They determine the goals people set for themselves; how much effort they expend; how long they persevere in the face of difficulties; and their resilience to failures” (p. 75).

Affective Processes

Self-efficacy beliefs, “. . . affect the nature and intensity of emotional experiences: through the exercise of personal control over thought, action, and affect” (Bandura, 1997, p. 137). Anxiety and stress levels are mediated by an individual’s belief in their own ability to control factors relating to a stressful or deleterious situation. If an individual possesses a high degree of efficacy, he/she is better able to control the thoughts, actions, and physiological affects of a given situation.

Selection Processes

Self-efficacy can play a significant role in regulating the type and manner of activities an individual chooses to undertake. Bandura (1994) stated that, “By the choices they make, people cultivate different competencies, interests and social networks that determine life courses” (p. 77). Efficacy not only influences the cognitive, motivational, and affective processes; efficacy also plays a key role in the selection of activities influential in determining career direction.
Bandura (1997) stated that, “Perceived self-efficacy is not a measure of the skills one has but a belief about what one can do under different sets of conditions with whatever skills one possesses” (p. 37). This research is intended to examine the environmental conditions under which students operate in an effort to determine the extent to which student self-efficacy and motivational beliefs are influenced by situational and demographic variables.

Overview of Self-Efficacy Research

The nature of this research study placed a high emphasis on the role of the learning environment in relation to student motivation. The independent variables of teacher immediacy and autonomy-support were theorized to influence the classroom environment and subsequently impact student self-efficacy and task value (see Figure 2.1). Self-efficacy, based on Bandura’s Social Cognitive Theory, relies upon the concept of triadic reciprocity. Behavior, internal personal factors, and the external environment interact in a reciprocal manner in the formation of self-efficacy beliefs (Bandura, 1997). A classroom, the context of this study, provides a distinct environment capable of developing and enhancing self-efficacy. The following sections detail the ways in which self-efficacy is influenced by the environment.

Relationship between self-efficacy and the environment

According to Bandura (1986), self-efficacy can be acquired through mastery experiences, vicarious experiences, verbal persuasion (and other types of social influences), and physiological and affective states. Bandura was careful to point out that
efficacy information must be cognitively processed for the development of self-efficacy. The one exception to this would be mastery experiences. An individual who is directly and actively involved in a mastery experience may forego certain steps in the cognitive evaluation process. Bandura (1997) recognized that many variables influence the cognitively based development of self-efficacy and stated, “A host of personal, social, and situational factors affect how direct and socially mediated experiences are cognitively interpreted” (p. 19). It is vitally important to recognize that there are four main sources of self-efficacy of which three require substantial cognitive processing. The following paragraphs examine, in detail, the four sources of self-efficacy. The distinction between this and prior sections is the added emphasis on the applicability of the four sources to the classroom environment. The theoretical relationships lend philosophical merit to the researchers’ conceptualization of the classroom environment as a direct influencer of student self-efficacy.

Mastery Experiences

Mastery experiences provide the greatest and most influential source of self-efficacy information (Bandura, 1997). Bandura (1997) believed that mastery experiences could best be cultivated through, “organizing mastery experiences in ways that are especially conducive to the acquisition of generative skills” (p. 80). Class instructors have the unique opportunity to successfully develop mastery experiences for students by breaking down complex skills into easily mastered subskills. Teachers can generate and offer students many chances to engage in and develop mastery skills, thus facilitating the
development of self-efficacy (Bandura, 1997). Self-efficacy will increase when students are able to experience small frequent successes.

Immediacy offers an avenue by which teachers can influence the class environment and thus increase self-efficacy. For instance, a teacher who allows student input into the development of course assignments (both immediate and autonomy-supportive) will have a greater likelihood of providing assignments which offer the student mastery experiences. Most students, when presented with an opportunity to provide input into assignments, will naturally gravitate towards assignments they feel capable of completing. Consequently, students will have a greater likelihood of mastery experiences.

Vicarious Experiences

Vicarious experiences are most frequently provided through modeled experiences. Bandura (1997) stated, “Personal capabilities are easier to judge for activities that produce independent objective indicants of adequacy” (p. 86). People often appraise their capabilities based on the observation of others (models) performing a given task. This allows for an objective, ‘safe’ determination of personal self-efficacy.

In a classroom setting, students may be unfamiliar with both the instructor and course content. Students, as novice participants, are extremely sensitive to vicarious experiences (Bandura, 1997). Subsequently, the students are likely to rely heavily on observation of the success of their peers, thus providing a direct connection between the classroom environment and vicarious experiences.
The success of other students in the class provides a measurement tool for personal self-efficacy. Teacher communication behaviors may act as messengers to convey both implicit and explicit efficacy messages. For instance, if a teacher asks a student for a personal opinion (both immediate and autonomy-supportive), the other students will closely watch the teacher’s reply in an effort to vicariously build personal self-efficacy. Thus, teacher communication has the theoretical ability to shape the classroom environment and increase student self-efficacy.

Verbal Persuasion

Verbal persuasion is a socially based action. Bandura (1997) believed the role of others was tremendously important in creating and sustaining self-efficacy. In a classroom setting, students and the instructor verbally interact. An immediate instructor will tend to offer support and encouragement to students, thereby increasing self-efficacy. Bandura (1997) stated, “It is easier to sustain a sense of efficacy, especially when struggling with difficulties, if significant others express faith in one’s capabilities than if they convey doubts” (p. 101). An instructor who encourages students to ask questions and praises students work, actions and comments (immediate) will tend to create an environment conducive to the growth and development of student self-efficacy. Immediate and autonomy-supportive teachers provide the catalyst to promote the sustained development of student self-efficacy.
Physiological and Affective States

When students are physiologically stressed, it is difficult to maintain, and virtually impossible to increase personal self-efficacy. Bandura emphasized the difficulty in maintaining self-efficacy when encountering severe physiological or adverse affective states. The classroom has the potential to, with a controlling and non-immediate instructor, create a physiologically adverse climate for the development of student self-efficacy. Bandura (1997) emphasized the importance of an awareness of the physiological and affect states and stated, “It is difficult to ignore internal visceral agitation when one is hyperventilating; sweating; tensing; trembling; and experiencing a pounding heart, stomach upsets, and bouts of insomnia” (p. 107). Instructors high in immediacy attempt to create a physiologically and affectively safe environment for student learning. Such an environment has the capability to enhance student self-efficacy.

Teachers who smile, call students by name, use humor in the class, and solicit the opinions and viewpoints of the students, tend to create a class atmosphere which minimizes student feelings of fear and inadequacy. Physiological and affective states provides a direct link between teacher communication behaviors, the classroom environment and student self-efficacy motivation.

While the theoretical linkage between immediacy, autonomy-support and self-efficacy appears strong, there is scant research regarding the direct influence of classroom environment on student self-efficacy. Dorman (2001) lamented the fact that efficacy theory has not closely examined the classroom environment. Dorman (2001) stated that, “Indeed it is striking that academic efficacy theory has not recognized the potential of psychosocial environment in explaining academic efficacy” (p. 246). The
term academic self-efficacy, while not used directly in the prior literature review, is simply defined as student self-efficacy relating to a specific academic context (Pajares, 2002). Academic self-efficacy can be reflective of a specific individual problem, subject matter, or course in general.

Dorman (2001) conducted research designed, in part, to explore the relationship between certain teacher actions and student self-efficacy. Dorman (2001) examined teacher support and the results yielded a statistically significant (p < .001) correlation between teacher support and student academic self-efficacy (r = 0.21). In addition to teacher support, Dorman also examined nine other classroom environment variables. Based on his research, Dorman (2001) concluded that 22% of the variance in academic self-efficacy could, when using students as the unit of analysis, be explained by the classroom environment scales. When using the classroom as the unit of analysis, 52% of the variance in academic self-efficacy was explained by the classroom environmental factors (Dorman, 2001). Dorman (2001) highlighted the paucity of environmental and academic efficacy research and stated, “...no previous research has investigated the influence of classroom environment on academic efficacy” (p. 253). The lack of available research specifically relating classroom environment to student self-efficacy highlights the need of this study.

Educational Benefits of Self-efficacy

Most of the published research tends to laud the beneficial educational implications of self-efficacy. In this sense, self-efficacy becomes an independent variable capable of influencing a wide variety of student thoughts and actions. Previous
to this paragraph, self-efficacy was examined and perceived as a dependent variable, influenced by teacher communication behaviors and the classroom environment. In the next section, the researcher will briefly review the perceived educational benefits of self-efficacy. While the following research focuses on the outcomes of self-efficacy, it nevertheless adds merit to the importance of self-efficacy in students. Whether conceptualized as an independent or dependent variable, there appear to be numerous benefits to self-efficacy.

Bandura (1997) believed that efficacious students tended to work harder, persist longer, participate more readily, and have fewer adverse emotional reactions than students who had lower self-efficacy. According to Zimmerman (2000), self-efficacy beliefs have been shown to influence student choice of activities, level of effort, persistence, and emotional reactions. Referring to choice of activities, Zimmerman stated that, “. . . self-efficacious students undertake difficult and challenging tasks more readily than do inefficacious students” (p. 86).

Self-efficacy tends to predict two measures of student effort: rate of performance and expenditure of energy, as well as student persistence in a task (Zimmerman, 2000). Schunk (1981) analyzed student persistence and demonstrated that persistence, based on self-efficacy, influenced skill acquisition via a direct and indirect route. The results of Schunk’s work were further supported by a meta-analytic review conducted by Multon, Brown and Lent (1991).

Multon et al. (1991) examined 39 different efficacy studies in an attempt to determine the relationship between self-efficacy beliefs and academic outcomes. Results provided support for the hypothesized relationship between self-efficacy beliefs and
academic performance and persistence. According to Multon et al., “Effect size estimates in both meta-analyses (.38 for performance and .34 for persistence) suggest that, across various types of student samples, designs, and criterion measures, self-efficacy beliefs account for approximately 14% of the variance in students’ academic performance and approximately 12% of the variance in their academic persistence” (p. 34). One unique aspect of the Multon et al. study was the apparent sensitivity and variability of self-efficacy across types of students, measures and study characteristics.

Multon et al. (1991) discovered two important findings as a result of their meta-analyses. First, self-efficacy to perform appeared to have a strong relationship with those students with a lower achievement status; therefore, self-efficacy may hold particular importance for lower achieving students. Second, self-efficacy research among high school and college students yielded much greater effect size measures. Multon et al. theorized that the effect size difference is probably reflective of the older students’ ability to more clearly assess personal levels of self-efficacy.

Bandura (1997) clearly believed that students’ self-efficacy beliefs concerning academic achievement influenced the students’ emotional states. Students who had high self-efficacy beliefs were more likely to have decreased stress, anxiety and depression (Bandura, 1997).

Schunk (1991) believed that personal factors and situational factors tended to influence student self-efficacy. From factors such as teacher feedback, “. . . students derive cues signaling how well they are learning, which they use to assess efficacy for further learning” (p. 209). Schunk believed that positive persuasory feedback will enhance student self-efficacy. However, Schunk cautioned that positive feedback, unless
supported with tangible positive results, would yield short term self-efficacy benefits.

Emphasizing the social influences on self-efficacy, Schunk (1991) stated, “Efficacy appraisals depend on attributional factors as well as other influences, such as situational circumstances under which performances occur, number and pattern of successes, and persuader credibility” (p. 211). Schunk believed that situational aspects, such as teacher and peer role models, were important sources of self-efficacy information.

Schunk (1991) believed that school factors played a crucial role in developing the self-efficacy beliefs of students. Schunk (1991) stated:

In school, children learn from all types of models, including teachers who are dissimilar in age, competence, and other characteristics. They also weigh and combine efficacy information from diverse sources; for example, they may observe peers succeed and receive positive feedback from teachers (e.g., “You can do this”), but experience difficulties when they attempt the task themselves. (p. 218)

Zimmerman (2000) supported the beliefs of Schunk regarding the importance of environmental and situational factors in the determination of self-efficacy beliefs. Zimmerman (2000) stated, “. . . self-efficacy is assumed to be responsive to changes in personal context and outcomes, whether experienced directly, vicariously, verbally, or physiologically” (p.88). Zimmerman stressed that self-efficacy beliefs tend to predict about 25% more variance in academic outcomes then instructional influences. Clearly, self-efficacy is influenced by and influences the academic environment and beliefs of the student.
Self-efficacy and personological variables

One of the research objectives of this dissertation study was intended to examine the role of various personological variables as potential influencers of self-efficacy. Unfortunately, very little published research is available which specifically addresses student gender differences relating to self-efficacy. Most of the available articles examine very domain specific aspects of self-efficacy, such as: gender differences in self-efficacy for online courses, or gender differences in self-efficacy for math or science related courses. In the following section, the researcher will only briefly examine the role of gender on self-efficacy beliefs. Further analysis of the impact of class size, instructor age, instructor gender and class type (elective vs. required) can be found in chapters four and five of this document, as the researcher was unable to uncover pertinent literature addressing the preceding personological variables.

Several studies do examine gender specific differences in self-efficacy. According to Schunk and Pajares (2002) researchers typically report males to exhibit greater self-efficacy in science and math, while boys and girls appear about equal in self-efficacy related to language arts. Pajares (1996) noted that when previous achievement is controlled for, the gender specific differences in student self-efficacy disappear. Eccles and Midgley (1989) discovered that gender differences in self-efficacy become more pronounced with student age. According to Eccles and Midgley, as students enter middle school and proceed toward high school, they develop more defined beliefs regarding self-efficacy.

Bussey and Bandura (1999) address the issue of gender differences in social cognitive theory. Based on their findings, Bussey and Bandura believed that social
gender constraints tend to loosely shape self-efficacy beliefs. Self-efficacy is rooted in social interaction, as children age, they desire the company of similarly gendered individuals. This gender segregation enhances subtle differences in student self-efficacy. However, it should be noted that these gender differences are reflective of specific social stereotypes (e.g. women are more proficient at nursing; men are more proficient at math etc.).

In addition to self-efficacy, task value motivation was perceived to constitute a second dependent variable. Both self-efficacy and task value have, and can be united under the motivational construct of expectancy-value. Self-efficacy differs from true expectancy theory in the specificity of measurement and attention to situational and contextual factors. Task value comprises the value portion of the expectancy-value model. Task value has been defined by Bong (2004), in reference to the Wigfield and Eccles (1992) model, as, “. . . an incentive to engage in academic activities, which represents a composite construct encompassing perceived importance, usefulness, and interest” (p. 288). The following sections detail the literature relevant to the examination of student task value motivation.

Expectancy-Value Theory

A Maury Povich-type debate rages concerning the true father of the Expectancy-Value Theory (EVT). After considerable scrutiny it appears that, like so many psychological motivation theories, numerous authors have made changes to the EV theory ranging from semantical to substantive. Atkinson (1957) is generally considered to be a foundational contributor to the EVT through his work on Attribution Theory. In
addition, Lewin’s Resultant Valence Theory added valuable components to the EV model (Weiner, 1992). In more recent years, the work of Wigfield and Eccles (Eccles, 1983; Wigfield, 1994) has added considerable knowledge pertaining to research on academic achievement. In reference to the current shift in EVT, Eccles (1983) stated, “Much of the work of the last decade, however, has shifted attention away from motivational constructs to cognitive constructs, such as causal attributions, subjective expectancies, self-concepts of abilities, perceptions of task difficulty, and subjective task value” (p. 79). Schunk, Pintrich, and Meece (2008) described the differences in the Eccles and Wigfield EV model, and stated:

It [Eccles & Wigfield EV model] bears some resemblance to the early expectancy-value theories of Lewin and Atkinson. It focuses on the role of students’ expectancies for academic success and their perceived value for academic tasks and springs from a general social cognitive perspective based in personality, social, and developmental psychology. (p. 50)

Because the nature of this research study deals primarily with academic motivation, the theories of Eccles and Wigfield will be further developed.

The Eccles et al. (1983) model of expectancy-value emphasizes two important predictors of academic behavior: expectancies for success and the subjective task value associated with the task (Schunk, Pintrich, & Meece, 2008). Wigfield and Eccles (2002) define expectancies for success as, “. . . children’s beliefs about how well they will do on an upcoming task” (p. 94). Eccles (2005) defined task value as, “. . . a quality of the task that contributes to the increasing or decreasing probability that an individual will select it” (p. 109). Furthermore, according to Eccles (2005), and Wigfield and Eccles (2002), subjective task value can be further subdivided into four components: attainment value,
intrinsic or interest value, utility value, and cost value. Figure 2.12 details the theoretical components of EVT as espoused by Wigfield and Eccles (2002).
Attainment Value (Importance): The importance of doing well, or participating in a given task (Eccles, 2005).

Intrinsic Value (Interest): The enjoyment one gains from doing a task (Wigfield & Eccles, 2002).

Utility Value: Refers to how a task fits into an individual's future plans (Wigfield & Eccles, 2002).

Cost Value: Refers to what an individual has to give up in order to do a task (Wigfield & Eccles, 2002).

Figure 2.12: Theoretical components of the Eccles and Wigfield Expectancy-Value Model (Wigfield and Eccles, 2002)
The nature of this research study requires a closer look at the sub-components of the subjective task values (STV). Specifically, the portion of the EVT assessed in this research was task value, and the chosen instrument to measure task value was designed to examine attainment (importance), interest and utility.

**Attainment Value**

According to Eccles (2005), there are four major assumptions pertaining to attainment value. First, individuals will view tasks as important when they view engagement in a task as central to their core sense of self. People filter task value through a lens of their personal sense of self. If a task meets an individual’s social or personal identity, they are more likely to view the task as important (Eccles, 2005).

Second, differentiated tasks allow individuals to express or confirm important concepts related to self. Therefore, allowing individuals to engage in many tasks, will over time, establish within the individual a sense of task value corresponding to, and strengthened by, their belief of self.

The third assumption of attainment value is that individuals tend to place greater value in tasks that fulfill their self-image and are consistent with their long-range goals (Eccles, 2005). Eccles (2005) goes on to further develop this idea by linking self-image to social contexts. Specifically, Eccles (2005) believes that an individual will place innate value in a task they perceive provides importance, respect, or acceptance in one’s social group.

The fourth assumption of attainment value is that individuals are more likely to accept tasks with high subjective value as opposed to tasks with low subjective value.
The subjective value of a task may vary based on task, group, gender or subject matter. (Eccles, 2005).

Intrinsic or Interest Value

Eccles (1983) defined intrinsic or interest value as simply, “. . . the inherent, immediate enjoyment one gets from engaging in an activity” (p. 89). Eccles (2005) likens intrinsic value to Csikszentmihalyi’s concept of flow. Intrinsic value results from being immersed in, and overcome with, the natural enjoyment of a given activity.

Utility Value

Utility value is different from intrinsic/interest value because utility value, “. . . is determined by the importance of the task for some future goal that might itself be somewhat unrelated to the process nature of the task at hand” (Eccles, 1983, pp. 89-90). In some respects, the focus on distant or future plans likens utility value to extrinsic motivation. The concept being, that individuals place value in a given activity, not for the sake of the activity, but rather for future benefits. While there are similarities to extrinsic motivation, it is possible for an individual to hold important personal long-range goals that are intrinsically driven; for instance, an individual who places high utility in a course, based not on the course, but rather on the job one desires upon graduation.

Cost Value

Cost value is based on the “costs” of participating in an activity. Costs can be associated with many task related feelings such as anxiety, fear of failure, fear of
rejection, anger, and fear of loss (Eccles, 2005). According to Eccles (2005), cost can also be, “... conceptualized in terms of the loss of time and energy for other activities” (p.113). Thus, cost value can refer to what an individual feels they must give up in order to accomplish a task (Eccles, 2005).

Eccles (1983) stated that subjective task value:

... is determined both by the characteristics of the task and by the needs, goals, and values of the person. The degree to which the task is able to fulfill needs, facilitate reaching goals, or affirm personal values determines the value a person attaches to engaging in that task. (p. 89)

Task Value Motivation

Task value motivation was conceptualized under the second half of the expectancy-value theory of motivation. Eccles (2005) stated that task value can be broken into four specific areas: importance (attainment), interest, utility and cost value. Importance, interest, utility and cost value act in concert to develop within an individual a specific measure of task value. Essentially, task value is a determination in which students ask themselves, “why am I doing this task?” (Pintrich, 1994).

Task value differs from efficacy beliefs in that a student may feel able to complete a specific task (efficacy), yet may not complete the task because they have no reason or incentive to do so (Wentzel & Wigfield, 1998). A student may feel able to succeed at a task but still have no desire to attempt the task. Task value motivation provides the impetus, and is the catalyst, for the attempting of a task. Consequently, task value is a vitally important component in the process of student motivation.
One of the independent variables selected in this research was autonomy-supportive teacher behaviors. Student autonomy has been previously linked to student task value motivation. In 1996, Garcia and Pintrich examined the effects of college student autonomy on student performance. Two of the dependent variables Garcia and Pintrich examined were self-efficacy and task value. Task value was found to correlate strongly with classroom autonomy. Student activity in an autonomous classroom appeared to increase student beliefs concerning task value. As students were allowed choice, they evidenced a gain in beliefs concerning the value—importance, interest, utility and cost—of the course (Garcia & Pintrich, 1996). Garcia and Pintrich (1996) also noted that autonomy appears more closely related to motivational factors (self-efficacy and task value) than to student performance.

Eccles (1983), with the help of her colleagues, found that the subjective task value beliefs of students predicted both intention and actual decisions regarding continued courses in the study of mathematics. However, it is important to note that the participants in this study were not college students; rather, they consisted of 5th grade students. The fact that younger students profess the intent to continue with similar coursework, based on their personal task value, lends credibility to the importance of task value.

Most of the research pertaining to the Eccles et al. conceptualization of task value has been conducted by either Eccles or Wigfield. While there is a sizable body of older task value related literature, the earlier research examined differing conceptualizations of task value. The present research employed the Eccles and Wigfield conceptualization of task value as it relates to academic motivation, and the current literature review reflected a similar focus. Thus the research available for review was limited.
Gender Differences in Task Values

Eccles and Wigfield have conducted extensive research examining the gender-specific stereotypical roles of boys and girls (Eccles et al., 1989, Wigfield, et al., 1991). Generally, stereotypical beliefs regarding perceived ability shape task value. Boys tend to value sports more than girls, and girls tend to prefer reading, English and instrumental music (Eccles et al, 1993; Wigfield et al., 1997). Both boys and girls however, as they age, seem to value math about equally. This clarifies the differing research reported by Eccles et al. (1983).

Task value is a motivational construct highly sensitive to particular tasks and context. Consequently, task value beliefs relating to gender tend to fluctuate greatly and are difficult to empirically assess (Pintrich, 1994). Due to the dynamic nature of task value motivation, there is a paucity of research relating to gender specific beliefs.

Relationship between Self-Efficacy and Expectancy Beliefs

Expectancy-value and self-efficacy are each theoretically discernable constructs, yet they share commonalities which encourage conceptualization under the banner of expectancy-value. In this research, expectancies include self-efficacy and value includes subjective task values.

Expectancy beliefs encompass a broad designation which includes many different types of motivational theories. When describing the generality of expectancy constructs, Pajares (1996) stated:
Expectancy constructs that can be found in the literature include task-specific self-concept, self-concept of ability, expectancies, expectancy beliefs, expectancy for success, performance expectancies, perceptions of competence, perceptions of task difficulty, self-perceptions of ability, ability perceptions, perceived ability, self-appraisals of ability, perceived control, subjective competence, and, of course, confidence. (p. 550)

While there are many different expectancy beliefs, the current research conceptualizes self-efficacy as a distinct and specific measure of expectancy. Regarding the similarities between expectancy beliefs and self-efficacy, Pajares (1997) stated, “Self-efficacy and other expectancy beliefs are similar in that they are each beliefs about one’s perceived capability. . .” (p. 9).

The point at which expectancy beliefs and self-efficacy differ is precisely the point of interest of this research. Self-efficacy tends to be a more precise measure which examines both contextual and situational factors. Because this research is intended to assess the motivation of students, contextual and situational factors are vitally important. When describing the precision of self-efficacy, Pajares (1997) stated, “As such, they [self-efficacy] differ from other expectancy beliefs in that self-efficacy judgments are both more task- and situation-specific and in that individuals make use of these judgments in reference to some type of goal” (p. 9). The presumed goal, in the case of students, would be success in a course.

While the semantical and conceptual blending of expectancy beliefs and self-efficacy may appear puzzling, it is important to note that the difference is merely in the specificity of measurement. The researcher was intent on examining, to the greatest degree possible, the expectancy beliefs students held in relation to a specific course and
subject matter. Self-efficacy was employed as a means to elucidate a maximal amount of information.

**Instrumentation**

Detailed information concerning instrumentation can be found in chapter 3 of this document. However, it is important to review the basics of the two instruments designed to measure self-efficacy and task-value. The brief review is intended to further connect the theories of self-efficacy and task value to the measurement of self-efficacy and task value.

*Measurement of self-efficacy*

The instrument utilized to measure self-efficacy was designed and developed by Pintrich, Smith, Garcia and McKeachie (1991) as a portion of the Motivated Strategies for Learning Questionnaire (MSLQ). Pintrich describes the self-efficacy portion of the instrument as intending to measure self-efficacy for learning and performance. Self-efficacy and expectancy, similar to the theories, are grouped in the MSLQ self-efficacy instrument. Duncan and McKeachie (2005) describe the synthesis of the MSLQ measurement of self-efficacy in that, “... both expectancy for success (which is specific to task performance) and judgments of one’s ability to accomplish a task and confidence in one’s skills to perform a task are collapsed within the general term self-efficacy” (p. 119).
Measurement of Task Value

According to the Eccles and Wigfield model of expectancy-value, the value portion of the model consists of four unique sub components: attainment (importance) value, intrinsic (interest) value, utility value and cost value. The instrument used to assess task value was also the MSLQ designed by Pintrich and his colleagues (1991). Specifically, the task value portion of the MSLQ was designed to consider three of the four value sub-components. The MSLQ refers to task value in light of interest (intrinsic) value, importance (attainment) value, and utility value.

Chapter Two Summary

Chapter two began with an exploration of the theory and literature supporting the independent variables of verbal immediacy, nonverbal immediacy and autonomy-support. All three variables are closely related to the classroom environment and are theorized to influence student motivation. Immediacy theory is designed to determine the degree of relatedness, closeness and belonging between a teacher and a student. Autonomy-support, grounded in self-determination theory, is intended to examine student perceptions regarding perceived classroom autonomy. Both immediacy and autonomy were perceived to measure low-inference and high-inference variables relating to teacher communication behaviors.

The two dependent variables of self-efficacy and task value were also examined. Self-efficacy was determined to fall under the expectancy construct and task value fell under the subjective task value construct. Constructs were merged under the umbrella expectancy-value theory. When considering the examination of both expectancy
constructs and value constructs, Pintrich (1994) stated, “At the same time, both expectancy and value beliefs can combine to engender student motivation. . . . It is difficult to discuss motivation without considering both expectancy and value components simultaneously” (p. 33).
CHAPTER 3

METHODS

Purpose of the Study

The purpose of this study was to examine the relationship between teacher communication and student motivation. The overall hypothesis, which served as a foundation for this research, was that teacher communication behaviors would be associated with student motivation. Specifically, teacher communication (verbal immediacy, nonverbal immediacy and autonomy-support) will serve to influence student self-efficacy and task value motivation.

Conceptually, teacher communication resides under the overarching construct of teacher effectiveness. Teachers, in a variety of ways, are judged on their overall effectiveness. As hypothesized by this research, teacher communication is a critical element of teacher behaviors and thus reflective of teacher effectiveness. Teacher communication comprises the independent variables of verbal immediacy, nonverbal immediacy, and autonomy-supportive teacher behaviors. The presumed dependent variables included elements of student motivation, as expressed by student self-efficacy and task value motivation. The objectives guiding and underlying this study are as follows.
Objectives of the Study

The objectives of the research study were to:

1. Describe the population based on demographic independent variables.
   a) What is the gender of the respondents?
   b) What is the gender of the instructors?
   c) What is the percentage of instructors in each age category?
   d) What is the percentage breakdown of the class sizes used in the analysis?
   e) What is the percentage of freshman, sophomores, juniors and seniors?
   f) What is the percentage of different subject areas represented by the student responses?
   g) What is the percentage of class type represented by the student responses?
   h) What is the percentage of class sections represented by the student responses?
   i) What is the percentage of class times represented by the student responses?

2. Determine the common factors of immediacy and classroom climate.
   a) What factors emerge from variables related to nonverbal immediacy, verbal immediacy, and classroom climate?

3. Explore the relationship between the common factors and demographic variables.
   a) Is there an association between class rank and teacher immediacy?
b) Is there an association between class section and teacher immediacy?

c) Is there an association between class meeting time and teacher immediacy?

d) Is there an association between instructor age and teacher immediacy?

e) Is there an association between class size and teacher immediacy?

f) Is there an association between class type and teacher immediacy?

g) Is there an association between student gender and teacher immediacy?

h) Is there an association between instructor type and teacher immediacy?

i) Is there an association between instructor gender and teacher immediacy?

4. Explore the relationship between the independent demographic variables and student motivation.

a) Is there a relationship between class rank and the motivational constructs?

b) Is there a relationship between class section and the motivational constructs?

c) Is there a relationship between class meeting time and the motivational constructs?

d) Is there a relationship between instructor age and the motivational constructs?

e) Is there a relationship between class size and the motivational constructs?

f) Is there a relationship between class type and the motivational constructs?

g) Is there a relationship between student gender and the motivational constructs?
h) Is there a relationship between instructor type and the motivational constructs?

i) Is there a relationship between instructor gender and the motivational constructs?

5. Explore the relationships between the independent common factors and the dependent motivational constructs of self-efficacy and task value.

   a. Is there an association between verbal immediacy and self-efficacy?
   b. Is there an association between verbal immediacy and task value?
   c. Is there an association between nonverbal immediacy and self-efficacy?
   d. Is there an association between nonverbal immediacy and task value?
   e. Is there an association between autonomy and self-efficacy?
   f. Is there an association between autonomy and task value?

Rationale for the Design and Methods of the Study

Because this study deals with both communication and motivation theories, previous research analyzing both constructs was examined to determine a suitable research design and methodology. Most of the studies examined employed a Likert-type assessment instrument administered to a diverse group of students. In an effort to increase student diversity, many research studies assessed students based on the class they attended immediately preceding the class in which collection occurred. This research design has been successfully used in communication and immediacy
research for several years (Plax, Kearney, McCrosky, & Richmond, 1986; Gorham, 1988; McCroskey, Richmond, & Bennett, 2006; Gorham & Christophel, 1992). Based on the high degree of published support for this methodology, this study employed a similar methodology.

Type of Research

This descriptive correlational study was designed to examine the relationship between independent and dependent variables from a purposive sample of college students with no intent to generate causal implications.

Population and Subject Selection

The target population consisted of college students enrolled in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University, Winter quarter, 2008. A purposive sample was selected and assessed from Agricultural Communications 390 and Rural Sociology 105 during the winter quarter of 2008. According to Ary, Jacobs, Razavieh and Sorensen (2006), a purposive sample is one in which, “. . . sample elements judged to be typical, or representative, are chosen from the population” (p. 174). The two courses in which the assessment was administered were identified and selected based on class size, accessibility, and enrollment of a diverse variety of majors. Both courses were presumed to be the two largest winter quarter College of Food, Agricultural, and Environmental Sciences courses that were not attached to specific majors.
The selected courses comprising the purposive sample were perceived to comprise a relative mix of freshman, sophomores, juniors, and seniors. Specifically, one course (Rural Sociology) was a 100 level course predominantly taken by freshman and sophomores, while the other course (Agricultural Communications 390) was a required college course predominately taken by juniors and seniors. Both were deemed to be courses which were representative of the entire college. However, based on the nonprobability method of collection, no attempt was made to generalize the results beyond the respondents (Ary et al. 2006). Data were collected from the two selected courses in which students were asked to assess instructor immediacy and their personal motivation in the class they had attended immediately previous to the class in which collection occurred.

Outcome Measures

The dependent outcome measures consisted of motivational measures of task value and self-efficacy. All dependent and independent measures were administered simultaneously during the midpoint of the winter quarter (6th week of a 10 week quarter).
Dependent Variable Measures

Task Value

Expectancy-value, an eclectic theory espoused by various authors (Rotter, Lewin, Atkinson, Eccles, & Wigfield), served as the basis for the creation of a task value measure. The expectancy-value measurement chosen for the research was the Task Value component of the Motivated Strategies for Learning Questionnaire (MSLQ) created by Pintrich, Smith, Garcia, and McKeachie (1991, 1993). The Task Value measure contained six Likert-type questions scaled from 1 (Not at all true of me) to 7 (Very true of me). Previously administrations of the Task Value segment of the MSLQ yielded a reliability coefficient of 0.90 (Duncan & McKeachie, 2005). A research study conducted with college students in agricultural education in a previous quarter revealed a Cronbach’s reliability coefficient of 0.86 (Velez & Cano, 2007). For the purposes of this research, the scale descriptors (Not at all true of me) and (Very true of me) were modified to read (Strongly disagree) and (Strongly agree). For instance, when answering the question, “I am very interested in the content area of this course,” participants were asked to rate their responses on a Likert-type questionnaire scaled from 1 (Strongly disagree) to 7 (Strongly agree). A panel of experts (Appendix C) consisting of graduate students and professors were asked to assess the validity of such a change, and all questions with the new scale descriptors were deemed valid. The MSLQ with the modified scale descriptors was administered to college students as a pilot study. The pilot study (n = 27) revealed a Cronbach’s reliability coefficient of 0.83.
Self-Efficacy

The Self-Efficacy for Learning and Performance measure was also a component of the MSLQ. The efficacy instrument consists of eight Likert-type questions similarly scaled from 1 (Not at all true of me) to 7 (Very true of me). Previous Cronbach reliability for the self-efficacy portion of the MSLQ was 0.93 (Duncan & McKeachie, 2005). A research study conducted previously revealed a Cronbach’s reliability coefficient of 0.94 (Velez & Cano, 2007). For the purposes of this research, the scale descriptors (Not at all true of me) and (Very true of me) were modified to read (Strongly disagree) and (Strongly agree). For instance, when answering the question, “I expect to do well in this class,” participants were asked to rate their responses on a Likert-type questionnaire scaled from 1 (Strongly disagree) to 7 (Strongly agree). A panel of experts (Appendix C) consisting of graduate students and professors were asked to assess the validity of such a change, and all questions with the new scale descriptors were deemed valid. The MSLQ with the modified scale descriptors was administered to college students as a pilot study. The pilot study (n = 27) revealed a Cronbach’s reliability coefficient of 0.96.

Independent Variable Measures

Nonverbal Immediacy

The Nonverbal Immediacy Behaviors (NIB) instrument consisted of 14 Likert type questions, each ranging from 1 (Never) to 5 (Very Often). In previous studies, the Nonverbal Immediacy Behaviors instrument resulted in summed reliability coefficients ranging from 0.73 to 0.89 (Christophel, 1990; Richmond et al., 1987). A research study
conducted previously revealed a Cronbach’s alpha reliability coefficient of 0.84 (Velez & Cano, 2007). The pilot study with college students (n = 27) revealed a Cronbach’s reliability coefficient of 0.82.

**Verbal Immediacy**

The Verbal Immediacy Behaviors (VIB) instrument consisted of 20 Likert type questions, each ranging from 1 (*Never*) to 5 (*Very Often*). The Verbal Immediacy Behaviors instrument had previously attained alpha and split-half reliabilities ranging from .83 to .94 (Christophel, 1990). A research study conducted previously revealed a Cronbach’s reliability coefficient of 0.89 (Velez & Cano, 2007). The pilot study with college students (n = 27) revealed a Cronbach’s reliability coefficient of 0.86.

**Autonomy**

Self-Determination Theory, espoused by Deci and Ryan (1985, 2002) formed the basis of the Learning Climate Questionnaire (LCQ). The LCQ was designed to measure the classroom climate, specifically the autonomy support provided by the instructor (Deci & Ryan, 1985, Williams & Deci, 1996). The LCQ long version consisted of 15 Likert-items scaled from 1 (*Strongly disagree*) to 7 (*Strongly agree*), and the short version consisted of a similarly scaled six-item questionnaire. Based on the reliability of the short version, and the desire to minimize response sets and lengthy questionnaires, the short version was used in this research. Previous research assessed the reliability and validity of this instrument. Published studies reported Cronbach’s alpha coefficients generally ranging above 0.90 (Black & Deci, 2000; Williams & Deci, 1996). A research
study conducted previously revealed a Cronbach’s reliability of .94 (Velez & Cano, 2007).

For the purposes of creating a uniformly scaled independent variable questionnaire, the LCQ was altered in both scaling and descriptors. The scale was modified from a 1 to 7 point Likert scale to a 1 to 5 point Likert scale questionnaire. The nature of the LCQ enabled alteration of the scale descriptors from an previous (Strongly disagree to Strongly agree) anchored at both ends, to individual number descriptors of 1 (Never), 2 (Rarely), 3 (Occasionally), 4 (Often), and 5 (Very often). For instance, questions such as “[my instructor] provides me choices and options” and “listens to how I would like to do things” were deemed to fit with the individual frequency descriptors scaled from 1 (Never) to 5 (Very often). A panel of experts (Appendix C) consisting of graduate students and professors were asked to assess the validity of such a change, and all questions with the new scale and item frequency descriptors were deemed valid. The LCQ with the modified scale and descriptors was administered to college students as a pilot study. The pilot study (n = 27) revealed a Cronbach’s reliability coefficient of 0.85.

**Assessment Method**

While the students surveyed attended one of two selected courses, the selected measurement was on the course immediately preceding the course in which data collection occurred. The method of collection, commonly used in past research studies (Plax, Kearney, McCroskey, & Richmond, 1986; Gorham, 1988; McCroskey, Richmond, & Bennett, 2006; Gorham & Christophel, 1992), was intended to minimize several of the following threats to validity.
Internal Validity

In reference to correlational research, Mitchell (1985) stated that:

The traditional list of confounds suggested by Campbell and Stanley (1963) is of only marginal help here. Because there are no experimental and control groups, issues such as history, selection, maturation, testing and regression have less relevance for judging the validity of the results. (p. 196)

Correlational research employs a slice of time snapshot of the responses of the participants. Thus, some of the traditional threats to internal validity, according to Mitchell (1985), have less relevance. The researcher will identify perceivable threats to specific types of internal validity.

Location

The researcher has no control over the environment in which the treatment occurs. Therefore, it is realistic to assume that the classroom environment in which the treatment occurs may be diverse. Regardless of diversity, the actual measurement is on the immediacy of a given teacher and the specific attitudes of the student who is completing the instrument. In order to address a possible location threat, students were asked to identify the course prefix in the questionnaire to control for the slight possibility that a significant proportion of the respondents came from the same classroom.

Instrumentation

All assessment instruments were previously established as valid and reliable. The characteristics of the data collector should not affect the results as all collected data will be quantitative in nature.
History

History effects posed a potential threat to the internal validity of this research. The researcher had no control over potential events which occurred between the teacher and the students. The method of data collection, in which students were asked to assess the class which they attended immediately preceding the course in which collection occurred, allowed for increase variability in the respondents, and thus aided in the minimization of a substantial history threat.

Attitude of the Subjects

Attitude of the subjects will always pose a potential threat. However, the independence of the treatment and the lack of researcher involvement should lesson the threat of an attitude change in the subjects. The attitude of the subjects towards the questionnaire may affect the results. Survey techniques require administration of a valid and reliable instrument with the understanding that the respondent attitudes relating to the research may vary.

Statistical Conclusion Validity

All instruments were deemed valid and reliable, and all data input into the statistical analysis package was analyzed for frequencies to identify errors in data entry. Statistical methods and hypothesized alpha levels were established a priori.
External Validity

The function of maintaining external validity is for the primary purpose of establishing credibility to generalize the findings beyond the respondents. In this research, no attempt was made, in any way, to generalize the findings past the respondents. As a result, minimal controls were established for external validity.

Target Population

The target population consisted of students enrolled in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. The purposive sample consisted of two selected courses at The Ohio State University, during the Winter quarter of 2008. As a result of the nonprobability sampling technique, no efforts were made to generalize the results beyond the respondents.

Personological Variables

Independent variables deemed to have a possible interaction with the dependent variables were identified and built into the study. Theories, research, and wisdom of practice provided the basis for identifying potentially confounding variables. Variables deemed to possibly impact independent variables were assessed in the study. The researcher recognized that student-teacher interaction, and the effects of that interaction, were mediated by a host of manifest and latent variables. The scope of this research precluded examination of all possible variables, and was instead, limited to those manifest variables perceived to directly influence the independent variables.
Non-Response Error

Students not in attendance on the day of measurement were considered non-respondents. Since the researcher did not have access to those students not in attendance on the day of collection, and did not have the ability to gain access to those individual students, no attempt was made to follow up on non-respondents.

Independent Variable Description

Specific, detailed information pertaining to the independent variables were presented in the preceding pages. Furthermore, all independent measures were included in the appendices.

Conditions of Testing

Instruments were administered to two pre-selected classes in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. During the sixth week of the quarter, students were asked to complete an instrument measuring teacher immediacy, classroom climate, and their motivation in that particular course. The assessment occurred midway through the quarter (6th week of a 10 week quarter) to provide an opportunity for students to become familiar with the immediacy of the instructor and to develop specific motivational thoughts and patterns concerning the course. Because the students were being assessed on a wide variety of courses, the researcher recognized that differences in the amount of exposure to the instructor and number of course assessments may impact student perceptions of the independent and dependent variables. The research methodology was intended to assess a large number of
students, representative of a large number of college courses. In this way, the potential differences in instructor exposure and course assessments would be mitigated (Gorham, 1988; McCroskey, Richmond, & Bennett, 2006).

Data were collected from two selected courses in which students were asked to assess instructor immediacy, and their resultant personal motivation, on the class they had attended immediately previous to the class in which data collection occurred. The two courses in which the assessment was administered were identified and selected based on class size, accessibility, and enrollment of a diverse variety of majors. The assessment method, commonly used in immediacy research (Plax, Kearney, McCrosky, & Richmond, 1986; Gorham, 1988; McCroskey, Richmond, & Bennett, 2006; Gorham & Christophel, 1992), was designed to maximize variability, as well as alleviate potential instructor discomfort which may occur as a result of observing individual courses and identifying specific instructors.

Treatment

The treatment consisted of the naturally occurring interaction between students and their course instructors. As students gained familiarity with the course instructor, and increased the duration of their interaction with the instructor, treatment levels (exposure to instructor behaviors) were presumed to increase. Consequently, data collection occurred during the mid-point (6th week) of the quarter to allow for a substantial exposure to the treatment.
Data Collection Procedures

All instruments, Nonverbal Immediacy Behaviors (NIB), Verbal Immediacy Behaviors (VIB), Learning Climate Questionnaire (LCQ), and the Task Value and Self-Efficacy portion of the Motivated Strategies for Learning Questionnaire (MSLQ), were combined into one cohesive questionnaire administered to the students. Demographic independent variables were addressed with the addition of questions pertaining to the nature of the class, respondents, and the instructor. Students were asked to complete the instruments based on the class they had attended immediately preceding the course in which data collection occurred.

All data were collected during the mid-point of the winter quarter. This timeline allowed the participants ample time to gain familiarity with the immediacy of the instructor, as well as participant motivation related to the course.

Data were collected from two existing courses offered within the College of Food, Agricultural, and Environmental Sciences. The first course consisted of 105 students, with 85 students choosing to participate in the research study for a response rate of 81 percent. The second course consisted of 145 students with 123 students choosing to participate in the research study for a response rate of 85 percent.

Data Analysis

Data were analyzed using SPSS 16.0 software. All nominal variables were dummy coded and input into SPSS. Table 3.1 contains a list of all variables and includes the variable level of measurement. Data analysis included frequencies and percentages,
central tendency and variability measures for nominal, ordinal, interval and ratio data, Pearson, Spearman, and Eta correlations, effect size differences, and factor analysis.

<table>
<thead>
<tr>
<th>Level of Measurement</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal</td>
<td><strong>Independent</strong>: Student Gender, Instructor Gender, Instructor Type (Professor v. Graduate Student), Type of Class (Elective v. Required), Year in School</td>
</tr>
<tr>
<td>Ordinal</td>
<td><strong>Independent</strong>: Instructor Age, Student Age, Class Size,</td>
</tr>
<tr>
<td>Interval</td>
<td><strong>Independent</strong>: Verbal Immediacy Behaviors (VIB), Nonverbal Immediacy Behaviors (NIB) Autonomy (LCQ)</td>
</tr>
<tr>
<td></td>
<td><strong>Dependent</strong>: Task Value (MSLQ), Self-Efficacy (MSLQ)</td>
</tr>
</tbody>
</table>

Table 3.1: Level of measurement of the independent and dependent variables
CHAPTER 4

RESULTS

Purpose of the Study

The purpose of this study was to examine the relationship between teacher communication and student motivation. The overall research question, which served as a foundation for this research, was that teacher communication behaviors were associated with student motivation. Specifically defined, teacher communication (verbal immediacy, nonverbal immediacy, and autonomy-support) served to influence student self-efficacy and task value motivation.

Conceptually, teacher communication resides under the overarching construct of teacher effectiveness. Teachers, in a variety of ways, are judged on their overall effectiveness. As theorized by this research, teacher communication was a critical element of teacher behaviors, and reflective of teacher effectiveness. Teacher communication comprised the independent variables of verbal immediacy, nonverbal immediacy, and autonomy-supportive teacher behaviors. The presumed dependent variables included elements of student motivation as expressed by student self-efficacy and task value motivation. The objectives guiding and underlying this study were as follows.
Objectives of the Study

The objectives of the research study were to:

1. Describe the population based on demographic independent variables.
   a) What is the gender of the respondents?
   b) What is the gender of the instructors?
   c) What is the percentage of instructors in each age category?
   d) What is the percentage breakdown of the class sizes used in the analysis?
   e) What is the percentage of freshman, sophomores, juniors and seniors?
   f) What is the percentage of different subject areas represented by the student responses?
   g) What is the percentage of class type represented by the student responses?
   h) What is the percentage of class sections represented by the student responses?
   i) What is the percentage of class times represented by the student responses?

2. Determine the common factors of immediacy and classroom climate.
   a) What factors emerge from variables related to nonverbal immediacy, verbal immediacy, and classroom climate?

3. Explore the relationship between the common factors and demographic variables.
   a) Is there an association between class rank and teacher immediacy?
   b) Is there an association between class section and teacher immediacy?
   c) Is there an association between class meeting time and teacher immediacy?
d) Is there an association between instructor age and teacher immediacy?

e) Is there an association between class size and teacher immediacy?

f) Is there an association between class type and teacher immediacy?

g) Is there an association between student gender and teacher immediacy?

h) Is there an association between instructor type and teacher immediacy?

i) Is there an association between instructor gender and teacher immediacy?

4. Explore the relationship between the independent demographic variables and student motivation.

a) Is there a relationship between class rank and the motivational constructs?

b) Is there a relationship between class section and the motivational constructs?

c) Is there a relationship between class meeting time and the motivational constructs?

d) Is there a relationship between instructor age and the motivational constructs?

e) Is there a relationship between class size and the motivational constructs?

f) Is there a relationship between class type and the motivational constructs?

g) Is there a relationship between student gender and the motivational constructs?

h) Is there a relationship between instructor type and the motivational constructs?

i) Is there a relationship between instructor gender and the motivational constructs?
5. Explore the relationships between the independent common factors and the dependent motivational constructs of self-efficacy and task value.
a) Is there an association between verbal immediacy and self-efficacy?
b) Is there an association between verbal immediacy and task value?
c) Is there an association between nonverbal immediacy and self-efficacy?
d) Is there an association between nonverbal immediacy and task value?
e) Is there an association between autonomy and self-efficacy?
f) Is there an association between autonomy and task value?
Response Rates

The target population consisted of students enrolled in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. The purposive sample consisted of two selected courses at The Ohio State University, during the Winter quarter of 2008. As a result of the nonprobability sampling technique, no efforts were made to generalize the results beyond the respondents.

Both courses had a combined enrollment of 250 students. Of the 250 possible respondents, 212 respondents returned questionnaires, with four questionnaires incomplete or missing more than five percent of responses. The four incomplete questionnaires were removed from the study resulting in a useable sample of 208 respondents.

The IRB protocol for this study prevented the researcher from recording specific student names. As a result, the researcher was unable utilize a class roll or attendance measure. Thus, the researcher was only able to report the number of returned questionnaires and, since there were no individual identifiers, calculation of nonrespondent rate was difficult. The only conclusions concerning completion rate were based on the course enrollment and those students completing instruments. Enrollment in the agricultural communication course was 105 students, with 85 students returning completed questionnaires, for a response rate of 81 percent. The enrollment in the rural sociology course was 145 students, with 123 completing usable instruments, for a response rate of 85 percent. No attempt was made to follow up on nonrespondents as they were not identifiable.
Reliability of the Dependent Measures

Task Value

The expectancy-value measurement chosen for the research was the Task Value component of the Motivated Strategies for Learning Questionnaire (MSLQ) created by Pintrich, Smith, Garcia, and McKeachie (1991, 1993). The Task Value measure contained six Likert-type questions scaled from 1 (Not at all true of me) to 7 (Very true of me). Previous administrations of the Task Value segment of the MSLQ yielded a reliability coefficient of 0.90 (Duncan & McKeachie, 2005). A research study, conducted with college students in agricultural education in a previous quarter, revealed a Cronbach’s reliability coefficient of 0.86 (Velez & Cano, 2007). For the purpose of this research, the scale descriptors (Not at all true of me) and (Very true of me) were modified to read (Strongly disagree) and (Strongly agree). When answering the question, “I am very interested in the content area of this course,” participants were asked to rate their responses on a Likert-type questionnaire scaled from 1 (Strongly disagree) to 7 (Strongly agree). A panel of experts, consisting of graduate students and professors, was asked to assess the validity of such a change, and all questions with the new scale descriptors were deemed valid. The MSLQ, with the modified scale descriptors, was administered to the college students. The pilot study, utilizing the modified descriptors, revealed a Cronbach’s reliability coefficient of 0.83 (n = 27). The post hoc Cronbach’s reliability was 0.93 (n = 208).
**Self-Efficacy**

The Self-Efficacy for Learning and Performance measure was also a component of the MSLQ. The efficacy instrument consisted of eight Likert-type questions similarly scaled from 1 (*Not at all true of me*) to 7 (*Very true of me*). Previous Cronbach reliability for the self-efficacy portion of the MSLQ was 0.93 (Duncan & McKeachie, 2005). A research study conducted previously revealed a Cronbach’s reliability coefficient of 0.94 (Velez & Cano, 2007). For the purpose of this research, the scale descriptors (*Not at all true of me*) and (*Very true of me*) were modified to read (*Strongly disagree*) and (*Strongly agree*). For instance, when answering the question, “I expect to do well in this class,” participants were asked to rate their responses on a Likert-type questionnaire scaled from 1 (*Strongly disagree*) to 7 (*Strongly agree*). A panel of experts, consisting of graduate students and professors, was asked to assess the validity of such a change, and all questions with the new scale descriptors were deemed valid. The MSLQ, with the modified scale descriptors, was administered to the college students. The pilot study (n = 27) revealed a Cronbach’s reliability coefficient of 0.96. A post hoc Cronbach’s reliability analysis was 0.96 (n = 208).

**Independent Variable Measures**

**Nonverbal Immediacy**

The Nonverbal Immediacy Behaviors (NIB) instrument consisted of 14 Likert-type questions, each ranging from 1 (*Never*) to 5 (*Very Often*). In previous studies, the Nonverbal Immediacy Behaviors instrument revealed reliabilities ranging from 0.73 to
0.89 (Christophel, 1990; Richmond et al., 1987). A research study conducted previously revealed a Cronbach’s alpha reliability coefficient of 0.84 (Velez & Cano, 2007). The pilot study (n = 27) revealed a Cronbach’s reliability coefficient of 0.82. A post hoc Cronbach’s reliability analysis was 0.85 (n = 208).

Verbal Immediacy

The Verbal Immediacy Behaviors (VIB) instrument consisted of 20 Likert-type questions, each ranging from 1 (Never) to 5 (Very Often). The Verbal Immediacy Behaviors instrument had previously attained alpha and split-half reliabilities ranging from 0.83 to 0.94 (Christophel, 1990). A research study conducted previously revealed a Cronbach’s reliability coefficient of 0.89 (Velez & Cano, 2007). The pilot study (n = 27) revealed a Cronbach’s reliability coefficient of 0.86.

Based on the suggestions of previous researchers (Gorham, 1988), three of the questions were removed from the instrument prior to the final collection of data. A post hoc analysis of the questions revealed one additional question with a negative reliability and a negative correlation with the other questions. In total, four questions were removed from the original instrument resulting in a 16 question instrument with a post hoc Cronbach’s reliability of 0.83 (n = 208).

Autonomy

Self-Determination Theory, espoused by Deci and Ryan (1985, 1991), formed the basis of the Learning Climate Questionnaire (LCQ). The LCQ was designed to measure the classroom climate, specifically, the autonomy support provided by the instructor
The LCQ long version consisted of 15 Likert-items scaled from 1 (Strongly disagree) to 7 (Strongly agree), and the short version consisted of a similarly scaled six item questionnaire. Based on the reliability of the short version, and the desire to minimize response set and a lengthy questionnaire, the short version was used in this research. Previous research assessed the reliability and validity of this instrument (Deci & Ryan, 1985, Williams & Deci, 1996). Published studies reported Cronbach’s alpha coefficients generally ranging above 0.90 (Black & Deci, 2000; Williams & Deci, 1996). A research study conducted previously revealed a short version Cronbach’s reliability of 0.94 (Velez & Cano, 2007).

For the purposes of creating a uniformly scaled independent variable questionnaire, the LCQ was altered in both scaling and descriptors. The scale was modified from a 1 to 7 point Likert scale to a 1 to 5 point Likert-type questionnaire. The nature of the LCQ enabled the altering of the scale descriptors from an previous (Strongly disagree to Strongly agree) to individual number descriptors of 1 (Never), 2 (Rarely), 3 (Occasionally), 4 (Often), and 5 (Very often). For instance, questions such as “[my instructor] provides me choices and options” and “listens to how I would like to do things” were deemed to fit with the individual frequency descriptors scaled from 1 (Never) to 5 (Very often). A panel of experts, consisting of graduate students and professors, was asked to assess the validity of such a change; all questions with the new scale, and item frequency descriptors were deemed valid. The LCQ with the modified scale and descriptors was administered to college students. The pilot study revealed a Cronbach’s reliability coefficient of 0.85 (n = 27). A post hoc Cronbach’s reliability revealed an alpha of 0.85 (n = 208).
Results by Objective

Objective 1

Describe the population based on demographic independent variables.

a) What was the gender of the respondents?

The respondents were 64% male and 36% female.

b) What was the gender of the instructors?

The respondents indicated the gender of 207 of the 208 instructors assessed. According to the respondents, 71.2 percent of the instructors were male, and 28.4 percent of the instructors were female.

c) What was the percentage of instructors in each age category?

Table 4.1 describes the instructor age, as perceived by the respondents, in the following categorical age breakdowns: 20-29, 30-39, 40-49, 50-59, 60-69, and 70 or more.
Table 4.1: Age categories of instructors assessed

d) What was the percentage breakdown of the class sizes used in the analysis?

Table 4.2 describes the breakdown of the data pertaining to class size.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-29</td>
<td>75</td>
<td>36.1</td>
<td>36.6</td>
</tr>
<tr>
<td>30-59</td>
<td>38</td>
<td>18.3</td>
<td>18.5</td>
</tr>
<tr>
<td>60-89</td>
<td>28</td>
<td>13.5</td>
<td>13.7</td>
</tr>
<tr>
<td>90-119</td>
<td>16</td>
<td>7.7</td>
<td>7.8</td>
</tr>
<tr>
<td>120-149</td>
<td>15</td>
<td>7.2</td>
<td>7.3</td>
</tr>
<tr>
<td>≥150</td>
<td>33</td>
<td>15.9</td>
<td>16.1</td>
</tr>
<tr>
<td>Total</td>
<td>205</td>
<td>98.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.2: Class sizes reported by respondents
Approximately 68 percent of the courses used in the analysis were between 0-89 students. Only 14.8 percent of the respondents indicated assessing courses between 90-149 students, while 15.8 percent indicated assessing courses larger than 150 students.

e) What was the percentage of freshman, sophomore, junior, and seniors?

Table 4.3 described the participants in relation to year in school.

<table>
<thead>
<tr>
<th>Year in School</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>45</td>
<td>21.6</td>
<td>21.6</td>
</tr>
<tr>
<td>Sophomore</td>
<td>49</td>
<td>23.6</td>
<td>23.6</td>
</tr>
<tr>
<td>Junior</td>
<td>70</td>
<td>33.7</td>
<td>33.7</td>
</tr>
<tr>
<td>Senior</td>
<td>44</td>
<td>21.2</td>
<td>21.2</td>
</tr>
<tr>
<td>Total</td>
<td>208</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.3: Participants according to year in school

The respondents represented a relative mix according to year in school. Freshman, sophomores, and seniors individually represented just over 20 percent each for a collective total of 66.4 percent. The largest respondent category was Junior students who comprised 33.7 percent of the respondents.

The following objectives (f - i) related to the course which the students chose to assess. Each student was asked to reflect on the course took immediately prior to the course in which data collection occurred. In other words, objectives (f - i) relate specifically to the course, and the instructor, which the students assessed.

f) What was the percentage of different course prefixes represented by the respondents?
Table 4.4 describes the percentage of different course prefixes represented by the responses of the participants. Respondents were widely scattered based on course prefix. The two largest categories were chemistry at 11.1 percent and math at 9.6 percent.

<table>
<thead>
<tr>
<th>Course prefixes assessed by the respondents</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Environmental &amp; Development</td>
<td>7</td>
<td>3.4</td>
</tr>
<tr>
<td>Economics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural &amp; Extension Education</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td>African-American &amp; African studies</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Agricultural Business</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Agricultural Communication</td>
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<tr>
<td>Animal Science</td>
<td>15</td>
<td>7.2</td>
</tr>
<tr>
<td>Anthropology</td>
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<tr>
<td>Architect</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Art Education</td>
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<td>0.5</td>
</tr>
<tr>
<td>Agricultural Systems Management</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Atmospheric Science</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Bio Chemistry</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Biology</td>
<td>14</td>
<td>6.7</td>
</tr>
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<td>Business</td>
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<td>Chemistry</td>
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<td>11.1</td>
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<tr>
<td>Communications</td>
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<td>0.5</td>
</tr>
<tr>
<td>Computer Science</td>
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<td>0.5</td>
</tr>
<tr>
<td>Comparative Studies</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Consumer Sciences</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Construction Systems Management</td>
<td>6</td>
<td>2.9</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Continued
Table 4.4 Continued

<table>
<thead>
<tr>
<th>Course prefix</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td>Education: Physical Activity and Education Services</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Educational Policy &amp; Leadership</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Evolution, Ecology &amp; Organismal Biology</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Engineering</td>
<td>7</td>
<td>3.4</td>
</tr>
<tr>
<td>English</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Environmental &amp; Natural Resources</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Family Resource Management</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Geography</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Greek</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Horticulture &amp; Crop Sciences</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td>Human Development and Family Sciences</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>History</td>
<td>10</td>
<td>4.8</td>
</tr>
<tr>
<td>Human Nutrition</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Ice Skating</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Italian</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Math</td>
<td>20</td>
<td>9.6</td>
</tr>
<tr>
<td>Molecular Genetics</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Music</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Plant Cellular &amp; Molecular Biology</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Philosophy</td>
<td>1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Continued
Table 4.4: Course prefixes assessed by the respondents

Table 4.4 Continued

<table>
<thead>
<tr>
<th>Course prefix</th>
<th>frequency</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics</td>
<td>9</td>
<td>4.3</td>
</tr>
<tr>
<td>Plant Biology</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Psychology</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Rural Sociology</td>
<td>14</td>
<td>6.7</td>
</tr>
<tr>
<td>Sociology</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Statistics</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Theatre</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>missing</td>
<td>9</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>208</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.4: Course prefixes assessed by the respondents

g) What was the percentage of class type represented by the participants?

Participants were asked to identify the class type they were assessing as either an elective or required course. Students identified 20.7% as elective and 78.4% as required.

h) What was the percentage of class sections represented by the student responses?

Participants were asked to identify whether the course they were assessing was a lecture, laboratory, or recitation. Respondents indicated 73.6% lecture, 9.6% laboratory, and 15.4% recitation.
i) What was the percentage of class times represented by the student responses?

Participants were asked to categorize the approximate time of the course which they were assessing. Respondents were presented with four options: early morning, middle of the day, late afternoon, and evening. Table 4.5 details the different class times reported by the respondents. The majority of courses (78.3%) were offered in the early morning and the middle of the day. Only 3.8 percent were identified as evening classes.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early Morning</td>
<td>81</td>
<td>38.9</td>
<td>39.5</td>
</tr>
<tr>
<td>Middle of the Day</td>
<td>82</td>
<td>39.4</td>
<td>40.0</td>
</tr>
<tr>
<td>Late Afternoon</td>
<td>34</td>
<td>16.3</td>
<td>16.6</td>
</tr>
<tr>
<td>Evening</td>
<td>8</td>
<td>3.8</td>
<td>3.9</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>208</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.5: Class times reported by the respondents
Objective 2

Determine what factors emerge from variables related to nonverbal immediacy, verbal immediacy, and classroom climate.

Research supports the construct validity of the nonverbal immediacy behaviors (NIB) instrument (Kearney, 1994), the verbal immediacy behaviors (VIB) instrument (Gorham, 1988, Kearney, 1994) and the learning climate questionnaire (LCQ) (Deci & Ryan, 1985, Williams & Deci, 1996). However, there is research which contradicts the single factor validity of both the NIB and the VIB instruments (Robinson & Richmond, 1995; Pribyl, Sakamoto, & Keaten, 2004).

Based on the contradictory literature, factor analysis was conducted on the NIB instrument developed by Richmond, Gorham, and McCroskey (1987), the VIB instrument developed by Gorham (1988) and the LCQ instrument developed by Deci and Ryan (1985). It should be noted however, that the researcher was unable to locate any research which called into question the validity of the LCQ.

Factor analysis was conducted under the following general guidelines. Retention of factors was based on two criteria recommended by Hair, Black, Babin, Anderson, and Tatham (2006). First, eigenvalues greater than 0.95 were retained. Commonly, eigenvalues should be above one. However, Hair et al. (2006) stated, “If the number of variables is less than 20, the tendency is for this method [eigenvalues of 1 or greater] to extract a conservative number of factors (too few)” (p. 120). Based on the Hair et al. (2006) recommendation, the eigenvalue necessary for retention was lowered to 0.95.
The second criteria for variable selection included selection until a base of 60% of the variance was explained. Hair et al. (2006) stated, “. . . in the social sciences . . . it is not uncommon to consider a solution that accounts for 60 percent of the total variance . . .” (p. 120). Factor analysis is a very subjective process which relies on researcher background knowledge and assumptions to guide the process. Both criteria were set as guides, with the realization that some allowances may be made in an effort to attain the best possible solutions.

Variables with factor loadings greater than 0.4 were assumed to load on a particular factor. Stevens (1996) recommended a conservative means to determine critical factor loadings by doubling the critical value for the correlation coefficient based on the sample size. Using Stevens (1996) recommendations with a sample size greater than 200, the critical value would be 0.182. Doubling the critical value would yield a cut off point of 0.364. Based on the sample size, the researcher believed that the best conservative critical value for the research study would be 0.4. Variables which cross-loaded on multiple factors with a correlation greater than 0.4 were considered to remain unfactored. Unfactored variables were noted at the end of the tables detailing variable loadings.

Sample size, according to Hair et al. (2006), should have, “. . . at least five times as many observations as the number of variables to be analyzed” (p. 112). Factor analysis of the NIB consisted of 208 respondents for each of the 14 individual variables, yielding a respondent-to-variable ratio of 14 to 1. Factor analysis of the VIB instrument consisted of 208 respondents for each of the 16 variables, yielding a 13 to 1 ratio. Factor analysis of the LCQ consisted of 208 respondents for each of the 6 variables, yielding a 34 to 1 ratio. The intent of the original objective, based on the review of literature, was
to combine both VIB and LCQ into one factor analysis. Presumably, the LCQ variables might load on some of the verbal immediacy factors and visa-versa. The combined VIB and LCQ contained 22 variables for a respondent to variable ratio of 9 to 1.

The use of factor analysis as a data reduction technique required an understanding of the overall measures of intercorrelation. A Kaiser-Meyer-Olkin measures of sampling adequacy test (0 to 1) was utilized to determine intercorrelation. Hair et al. (2006) recommended the MSA score exceed 0.50 for the continuation of factor analysis.

**a) Factor analysis of nonverbal immediacy behaviors instrument**

Factor analysis of the 14 variables comprising the NIB instrument yielded four factors accounting for 63% of the variance. The MSA test resulted in a score of 0.832. Table 4.6 describes the factors retained, the eigenvalues and the amount of variance explained.

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Var.</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>1</td>
<td>4.972</td>
<td>35.515</td>
</tr>
<tr>
<td>2</td>
<td>1.738</td>
<td>12.415</td>
</tr>
<tr>
<td>3</td>
<td>1.225</td>
<td>8.753</td>
</tr>
<tr>
<td>4</td>
<td>0.968</td>
<td>6.911</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

Table 4.6: Factors extracted from nonverbal immediacy behaviors instrument
The four retained factors were intercorrelated (MSA) and were considered good candidates for factor analysis. The researcher utilized both an orthogonal and oblique rotation to determine which yielded the simplest structure. The orthogonal, varimax rotation was chosen based on the relatively low variable correlations and the clarity of factor structure. Questions corresponding to the four factors retained, and the variable factor loadings are described in Table 4.6. Variables with factor loadings greater than 0.4 were assumed to load on that factor. Variables loading on multiple factors with loadings greater than 0.4 were considered to remain unfactored.
Table 4.7: Factors and rotated factor loadings from the nonverbal immediacy behaviors instrument

Factor analysis of the nonverbal immediacy behaviors instrument yielded problematic results. Kearney (1994) stated that items in the NIB instrument “. . . consistently result in a single-factor solution when analyzed with items from the verbal immediacy scale” (pp. 238-239). Gorham (1988) stated, “All items [verbal and nonverbal] had their highest loading on the first, unrotated factor” (p. 43). However,
Pribyl, Sakamoto, and Keaten (2004) examined the NIB instrument in relation to translation into Japanese. Upon translation, the NIB instrument yielded a three factor (55% variance) obliquely rotated solution. The three factors were labeled “relational expressiveness,” “animation,” and “non-relational behavioral expressiveness” (p. 79).

An additional interpretation problem arises when considering the number of loadings per factor and the sample size. While earlier citations established the adequacy of the sample size for factor analysis, there are several authors with varying opinions. Sample size becomes problematic if the factor loadings are not particularly high, or if there are few variables which load on a given factor. Stevens (1996) indicated that components with at least four loadings greater than 0.60, or components with at least three loadings greater than 0.80 are reliable regardless of sample size. Based on Stevens (1996) recommendations, Table 4.6 failed to produce reliable factors. The factor analysis would be deemed uninterpretable based on the sample size, the magnitude of the loadings, and the number of loadings per factor.

The purpose of this research was not to conduct an in-depth review of instrument validity. Based on sample size, the researcher recognized the inherent possibility of reaching problematic factorial results. Further discussion pertaining to instrument validity will occur in Chapter 5.

Factor analysis of the nonverbal immediacy behaviors instrument was deemed problematic and yielded results which were uninterpretable. Therefore, the instrument in its entirety was retained and considered to measure the construct of nonverbal immediacy. This is in accordance with the findings, grounded in a larger sample size, of Gorham
Further analysis of objectives will include the single-factor construct of nonverbal immediacy.

*b) Factor analysis of the verbal immediacy behaviors (VIB) and learning climate questionnaire (LCQ).*

All previously mentioned guidelines for the use factor analysis were employed in the examination of VIB and LCQ. Initial examination revealed that the LCQ did not factor well with the VIB. The LCQ tended to either load by itself on a single factor or cross-load with several VIB factors. Therefore, the researcher separated the LCQ variables from the VIB variables and conducted further analysis. The results of both the LCQ and the VIB factor analysis are as follows.

Factor analysis of the six variables comprising the LCQ instrument yielded a single factor solution accounting for 58% of the variance. A Kaiser-Meyer-Olkin measure of sampling adequacy test (0 to 1) was utilized to determine intercorrelation (Hair et al, 2006). Results indicated a MSA value of 0.84 indicating high correlations between variables. Table 4.8 describes the factors retained, the eigenvalues, and the amount of variance explained.
<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>3.457</td>
<td>57.615</td>
</tr>
<tr>
<td>2</td>
<td>0.754</td>
<td>12.571</td>
</tr>
<tr>
<td>3</td>
<td>0.649</td>
<td>10.821</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

Table 4.8: Single factor extracted from learning climate questionnaire

The learning climate questionnaire was unrotated, as rotation was not possible with a single factor solution. Questions corresponding to the factor retained, and the variable factor loadings, are described in Table 4.8. Variables with factor loadings greater than 0.4 were assumed to load on that factor. Variables loading on multiple factors with loadings greater than 0.4 were considered to remain unfactored.

| Provides me choices and options | .762 |
| Encourages me to ask questions | .657 |
| I feel understood by my instructor | .804 |
| Listens to how I would like to do things | .825 |
| Conveys confidence in my ability to do well in the course | .713 |
| Tries to understand how I see things before suggesting a new way to do things | .780 |

Extraction Method: Principal Component Analysis.

Table 4.9: Factor loadings from the learning climate questionnaire
According to the Stevens (1996) criteria, factors with at least four loadings greater than 0.60 are reliable regardless of sample size. The learning climate questionnaire appears to represent a single-factor valid instrument. Based on the unity of the LCQ, the questionnaire was separated from the VIB and retained as an independent construct measuring the autonomy-supportive behaviors of instructors. Further analysis referred to the LCQ construct as autonomy.

Factor analysis of the 16 variables comprising the Verbal Immediacy Behaviors instrument yielded a four factor solution accounting for 62% of the variance. A Kaiser-Meyer-Olkin measure of sampling adequacy test (0 to 1) was utilized to determine intercorrelation (Hair et al., 2006). Results indicated a MSA value of 0.86, indicating high correlations between variables. Table 4.9 describes the factors retained, the eigenvalues, and the amount of variance explained.

<table>
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<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>6.111</td>
<td>38.191</td>
</tr>
<tr>
<td>2</td>
<td>1.758</td>
<td>10.988</td>
</tr>
<tr>
<td>3</td>
<td>1.009</td>
<td>6.303</td>
</tr>
<tr>
<td>4</td>
<td>0.984</td>
<td>6.149</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

Table 4.10: Factors extracted from verbal immediacy behaviors instrument
The four retained factors were intercorrelated (MSA) and were considered good candidates for factor analysis. The researcher utilized both an orthogonal and oblique rotation to determine which yielded the simplest structure. The orthogonal, varimax rotation was chosen based on the relatively low variable correlations and the clarity of factor structure. Questions corresponding to the four factors retained, and the variable factor loadings are described in Table 4.11. Variables with factor loadings greater than 0.4 were assumed to load on that factor. Variables loading on multiple factors with loadings greater than 0.4 were considered to be cross-loaded and remained unfactored.
Table 4.11: Factors and rotated factor loadings from the verbal immediacy behaviors instrument

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has initiated conversations with me before, after or outside of class</td>
<td></td>
<td></td>
<td>.634</td>
<td></td>
</tr>
<tr>
<td>Provides feedback on my individual work through comments on papers, oral discussions, etc</td>
<td></td>
<td>.695</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addresses students by name</td>
<td></td>
<td></td>
<td>.882</td>
<td></td>
</tr>
<tr>
<td>Addresses me by name</td>
<td></td>
<td></td>
<td>.906</td>
<td></td>
</tr>
<tr>
<td>Uses personal examples or talks about experiences she/he has had outside of class</td>
<td></td>
<td>.697</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses humor in class</td>
<td></td>
<td>.756</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gets into conversations with individual students before or after class</td>
<td></td>
<td></td>
<td>.723</td>
<td></td>
</tr>
<tr>
<td>Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan</td>
<td></td>
<td></td>
<td>.613</td>
<td></td>
</tr>
<tr>
<td>Asks how students feel about assignments, due dates or discussion topics</td>
<td></td>
<td></td>
<td>.676</td>
<td></td>
</tr>
<tr>
<td>Asks questions that solicit viewpoints or opinions</td>
<td></td>
<td></td>
<td>.494</td>
<td></td>
</tr>
<tr>
<td>Will have discussions about things unrelated to class with individual students or with the class as a whole</td>
<td></td>
<td></td>
<td>.693</td>
<td></td>
</tr>
<tr>
<td>Invites students to telephone or meet with him/her outside of class if they have questions or want to discuss something</td>
<td></td>
<td></td>
<td></td>
<td>.781</td>
</tr>
<tr>
<td>Praises students' work, actions, or commentsb</td>
<td>.407</td>
<td>.435</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refers to class as &quot;our&quot; class or what &quot;we&quot; are doingb</td>
<td>.562</td>
<td>.411</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asks questions or encourages students to talkb</td>
<td>.441</td>
<td>.407</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is addressed by his/her first name by the studentsb</td>
<td>.454</td>
<td>.443</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Rotation converged in 9 iterations. Cross-loaded questions which remained unfactored
Similar to the NIB instrument, an interpretation problem arose when considering the number of loadings per factor and the sample size. Sample size becomes problematic if the factor loadings are not particularly high, or if there are few variables which load on a given factor. Stevens (1996) indicated that components with at least four loadings greater than 0.60, or components with at least three loadings greater than .80, are reliable, regardless of sample size. Based on Stevens (1996) recommendations, Table 4.11 produces one reliable factor. However, the rotated factor 1 accounted for only 20 percent of the variance. Since the amount of variance accounted for was previously set at a minimum of 60 percent, the one factor solution fails to adequately summarize the verbal immediacy behaviors instrument. The VIB instrument failed to yield an adequate interpretable factor analysis. In regards to validity, the original author of the VIB instrument (Gorham, 1988) stated, “All items had their highest loading on the first, unrotated factor. Forced two, three and four rotated factor solutions (oblique) did not yield interpretable results” (p. 43).

Further discussion on the merits of instrument validity and factor analysis will be addressed in chapter five. For the remainder of the research document, the VIB instrument will be analyzed as a cohesive single-factor construct of verbal immediacy. This is in accordance with the findings, grounded in a larger sample size of Gorham (1988).
Objective 3

Explore the relationship between nonverbal immediacy, verbal immediacy, autonomy, and demographic variables.

As a result of factor analysis, each of the constructs of nonverbal immediacy, verbal immediacy, and autonomy were separated and retained as independent variables in the study. The following subsets of objectives were comprised of point-biserial, \( \eta \), and Pearson-Product moment correlations. Each objective analyzed one demographic question and sought to determine the association between the demographic variable and nonverbal immediacy, verbal immediacy, and autonomy.

Correlation coefficients were described using the adjectives defined by Bartz (1999, p. 184). Table 4.12 depicts the adjectives suggested by Bartz.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.80 or higher</td>
<td>Very High</td>
</tr>
<tr>
<td>.60 to .79</td>
<td>Strong</td>
</tr>
<tr>
<td>.50 to .59</td>
<td>Moderate</td>
</tr>
<tr>
<td>.20 to .49</td>
<td>Low</td>
</tr>
<tr>
<td>.00 to .19</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

Table 4.12: Bartz’s adjectives describing strength of relationships (1999, p. 184).
Objective 3: Sub-points (a – c)

a) Is there an association between class rank and verbal/nonverbal immediacy and autonomy?

b) Is there an association between class type and verbal/nonverbal immediacy and autonomy?

c) Is there an association between class section and verbal/nonverbal immediacy and autonomy?

Objective sub-points (a – c) were grouped in the following tables. Table 4.13 describes the demographic data and Table 4.14 details the association between the demographic characteristics and verbal/nonverbal immediacy and autonomy. Table 4.15 describes the mean values for objective sub-points (a – c).
<table>
<thead>
<tr>
<th>Obj.</th>
<th>Variable</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (a)</td>
<td>Class Rank</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freshman</td>
<td>45</td>
<td>21.6</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td>49</td>
<td>23.6</td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td>70</td>
<td>33.7</td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td>44</td>
<td>21.2</td>
</tr>
<tr>
<td>3 (b)</td>
<td>Class Section</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lecture</td>
<td>153</td>
<td>73.6</td>
</tr>
<tr>
<td></td>
<td>Laboratory</td>
<td>20</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td>Recitation</td>
<td>32</td>
<td>15.4</td>
</tr>
<tr>
<td>3 (c)</td>
<td>Class Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early Morning</td>
<td>81</td>
<td>38.9</td>
</tr>
<tr>
<td></td>
<td>Middle of the Day</td>
<td>82</td>
<td>39.4</td>
</tr>
<tr>
<td></td>
<td>Afternoon</td>
<td>34</td>
<td>16.3</td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td>8</td>
<td>3.8</td>
</tr>
</tbody>
</table>

*Note.* Rounded percentages may not equal 100

Table 4.13: Demographic data for objectives sub-points (a – c)

Respondents reported a relative mix based on class rank. Junior level students reported with 70 respondents, 21 respondents higher than the next closest category. Class section was 73.6 percent lecture and the most common class times were early morning (38.9%) and middle of the day (39.4%).
<table>
<thead>
<tr>
<th>Obj.</th>
<th>Nominal Variable</th>
<th>Interval Variable</th>
<th>Value</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (a)</td>
<td>Class Rank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Verbal</td>
<td>.169</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Nonverbal</td>
<td>.064</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Autonomy</td>
<td>.167</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td>3 (b)</td>
<td>Class Section</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Verbal</td>
<td>.065</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Nonverbal</td>
<td>.150</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Autonomy</td>
<td>.080</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td>3 (c)</td>
<td>Class Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Verbal</td>
<td>.142</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Nonverbal</td>
<td>.196</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Autonomy</td>
<td>.124</td>
<td>Very Low</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.14: Eta correlations between nominal and interval variables for objective sub-points (a – c)
Table 4.15: Mean values for sub-points (a – c)

<table>
<thead>
<tr>
<th>Obj.</th>
<th>Verbal</th>
<th>Nonverbal</th>
<th>Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Rank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>2.57 (.75)</td>
<td>3.54 (.65)</td>
<td>2.59 (.67)</td>
</tr>
<tr>
<td>Sophomore</td>
<td>2.80 (.89)</td>
<td>3.63 (.61)</td>
<td>2.84 (1.02)</td>
</tr>
<tr>
<td>Junior</td>
<td>2.89 (.73)</td>
<td>3.58 (.64)</td>
<td>2.96 (.90)</td>
</tr>
<tr>
<td>Senior</td>
<td>2.92 (.76)</td>
<td>3.52 (.76)</td>
<td>2.99 (.91)</td>
</tr>
<tr>
<td>3 (b)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Section</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecture</td>
<td>2.79 (.82)</td>
<td>3.63 (.64)</td>
<td>2.82 (.92)</td>
</tr>
<tr>
<td>Laboratory</td>
<td>2.77 (.76)</td>
<td>3.45 (.56)</td>
<td>3.06 (.86)</td>
</tr>
<tr>
<td>Recitation</td>
<td>2.91 (.71)</td>
<td>3.40 (.65)</td>
<td>2.88 (.81)</td>
</tr>
<tr>
<td>3 (c)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early Morning</td>
<td>2.80 (.82)</td>
<td>3.61 (.69)</td>
<td>2.78 (.89)</td>
</tr>
<tr>
<td>Middle of the Day</td>
<td>2.81 (.75)</td>
<td>3.60 (.58)</td>
<td>2.92 (.90)</td>
</tr>
<tr>
<td>Late Afternoon</td>
<td>2.92 (.82)</td>
<td>3.56 (.64)</td>
<td>2.98 (.97)</td>
</tr>
<tr>
<td>Evening</td>
<td>2.29 (.67)</td>
<td>2.96 (.49)</td>
<td>2.46 (.68)</td>
</tr>
</tbody>
</table>

Note. Numbers in parenthesis indicate standard deviation

Table 4.15: Mean values for sub-points (a – c)

**Objective 3: Sub-points (d – e)**

**d) Is there an association between instructor age and teacher immediacy?**

**e) Is there an association between class size and teacher immediacy?**
Objective sub-points (d) and (e) were grouped in the following tables. Table 4.16 describes the demographic data and Table 4.17 details the association between the demographic characteristics and verbal/nonverbal immediacy and autonomy. Table 4.18 describes the mean values for objective sub-points (d) and (e).

<table>
<thead>
<tr>
<th>Obj.</th>
<th>Characteristic</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (d)</td>
<td>Instructor Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20-29</td>
<td>45</td>
<td>21.6</td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>42</td>
<td>20.2</td>
</tr>
<tr>
<td></td>
<td>40-49</td>
<td>45</td>
<td>21.6</td>
</tr>
<tr>
<td></td>
<td>50-59</td>
<td>59</td>
<td>28.4</td>
</tr>
<tr>
<td></td>
<td>60-69</td>
<td>14</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>70 or more</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>3 (e)</td>
<td>Class Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0-29</td>
<td>75</td>
<td>36.1</td>
</tr>
<tr>
<td></td>
<td>30-59</td>
<td>38</td>
<td>18.3</td>
</tr>
<tr>
<td></td>
<td>60-89</td>
<td>28</td>
<td>13.5</td>
</tr>
<tr>
<td></td>
<td>90-119</td>
<td>16</td>
<td>7.7</td>
</tr>
<tr>
<td></td>
<td>120-149</td>
<td>15</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>150 or more</td>
<td>33</td>
<td>15.9</td>
</tr>
</tbody>
</table>

*Note.* Rounded percentages may not equal 100

Table 4.16: Demographic data for objectives sub-points (d - e)
<table>
<thead>
<tr>
<th>Obj.</th>
<th>Nominal Variable</th>
<th>Interval Variable</th>
<th>Value</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (d)</td>
<td>Instructor Age</td>
<td>x Verbal</td>
<td>.220</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Nonverbal</td>
<td>.265</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Autonomy</td>
<td>.184</td>
<td>Very Low</td>
</tr>
<tr>
<td>3 (e)</td>
<td>Class Size</td>
<td>x Verbal</td>
<td>.378</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Nonverbal</td>
<td>.097</td>
<td>Very Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Autonomy</td>
<td>.343</td>
<td>Low</td>
</tr>
</tbody>
</table>

Table 4.17: Eta correlations between nominal and interval variables for objective sub-points (d – e)
Autonomy-supportive behaviors appeared to increase with age and decrease with class size. However, it is important to recognize that in Table 4.18, data reflective of both graduate students and faculty members was merged. Table 4.19 was designed to further elucidate the mean data and identify the respective mean scores of both graduate students and professors.
<table>
<thead>
<tr>
<th>Obj.</th>
<th>Instructor Age</th>
<th>Verbal</th>
<th>Nonverbal</th>
<th>Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Graduate Student</td>
<td>Professor</td>
<td>Graduate Student</td>
<td>Professor</td>
</tr>
<tr>
<td>(d)</td>
<td>20-29</td>
<td>2.78 (.66)</td>
<td>n = 36</td>
<td>2.53 (.64)</td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>3.05 (1.07)</td>
<td>n = 10</td>
<td>2.63 (.83)</td>
</tr>
<tr>
<td></td>
<td>40-49</td>
<td>--</td>
<td>2.61 (.88)</td>
<td>n = 45</td>
</tr>
<tr>
<td></td>
<td>50-59</td>
<td>--</td>
<td>3.07 (.78)</td>
<td>n = 59</td>
</tr>
<tr>
<td></td>
<td>60-69</td>
<td>--</td>
<td>2.84 (.62)</td>
<td>n = 14</td>
</tr>
<tr>
<td></td>
<td>70 or more</td>
<td>--</td>
<td>2.81 (--</td>
<td>n = 1</td>
</tr>
<tr>
<td>3</td>
<td>(e) Class Size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0-29</td>
<td>2.92 (.66)</td>
<td>n = 38</td>
<td>3.19 (.76)</td>
</tr>
<tr>
<td></td>
<td>30-59</td>
<td>2.40 (.82)</td>
<td>n = 8</td>
<td>2.99 (.73)</td>
</tr>
<tr>
<td></td>
<td>60-89</td>
<td>--</td>
<td>2.93 (.89)</td>
<td>n = 27</td>
</tr>
<tr>
<td></td>
<td>90-119</td>
<td>--</td>
<td>2.53 (.81)</td>
<td>n = 15</td>
</tr>
<tr>
<td></td>
<td>120-149</td>
<td>--</td>
<td>2.76 (.87)</td>
<td>n = 15</td>
</tr>
<tr>
<td></td>
<td>150 or more</td>
<td>--</td>
<td>2.23 (.53)</td>
<td>n = 33</td>
</tr>
</tbody>
</table>

*Note. Numbers in parenthesis indicate standard deviation*

Table 4.19: Mean values for sub-points (d – e) separated by instructor type
Objective 3: Sub-points (f - i)

f) Is there an association between class type and teacher immediacy?

g) Is there an association between student gender and teacher immediacy?

h) Is there an association between instructor type and teacher immediacy?

i) Is there an association between instructor gender and teacher immediacy?

Table 4.20 describes the demographic characteristics of the categories utilized in the analysis of objective 3 sub-points (f – i). Respondents indicated a high percentage (78.4) were assessing a required class. Student gender was 63.5 percent male, closely resembling the instructor male gender of 71.6 percent. Instructor type was predominantly professors (76.4%).
<table>
<thead>
<tr>
<th>Obj.</th>
<th>Characteristic</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (f)</td>
<td>Class Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>43</td>
<td>20.7</td>
</tr>
<tr>
<td></td>
<td>Required</td>
<td>163</td>
<td>78.4</td>
</tr>
<tr>
<td>3 (g)</td>
<td>Student Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>132</td>
<td>63.5</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>76</td>
<td>36.5</td>
</tr>
<tr>
<td>3 (h)</td>
<td>Instructor Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>159</td>
<td>76.4</td>
</tr>
<tr>
<td></td>
<td>Graduate Student</td>
<td>46</td>
<td>22.1</td>
</tr>
<tr>
<td>3 (i)</td>
<td>Instructor Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>149</td>
<td>71.6</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>59</td>
<td>28.4</td>
</tr>
</tbody>
</table>

*Note.* Rounded percentages may not equal 100.

Table 4.20: Demographic data for objectives sub-points (f – i)

Table 4.21 identifies the point-biserial correlations of the variables identified by sub-points (f – i). Point-biserial correlations were very low to low on all associations. The highest association was evidenced between verbal immediacy and class type ($r_{pb} -.251$), with the second highest between nonverbal immediacy and student gender ($r_{pb} .232$).
<table>
<thead>
<tr>
<th>Obj.</th>
<th>Class type</th>
<th>Verbal Immediacy</th>
<th>Nonverbal Immediacy</th>
<th>Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (f)</td>
<td>Class type</td>
<td>Point-biserial</td>
<td>-.251&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.166&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.017</td>
<td>.021</td>
</tr>
<tr>
<td>3 (g)</td>
<td>Gender</td>
<td>Point-biserial</td>
<td>.056</td>
<td>.232&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.423</td>
<td>.001</td>
<td>.259</td>
</tr>
<tr>
<td>3 (h)</td>
<td>Instructor Type</td>
<td>Point-biserial</td>
<td>.010</td>
<td>-.151&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.890</td>
<td>.030</td>
<td>.363</td>
</tr>
<tr>
<td>3 (i)</td>
<td>Instructor Gender</td>
<td>Point-biserial</td>
<td>.139&lt;sup&gt;*&lt;/sup&gt;</td>
<td>.055</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.046</td>
<td>.432</td>
<td>.251</td>
</tr>
</tbody>
</table>

Note. Correlations, unless noted, were identified by the adjective of “Very Low”

<sup>a</sup> Denotes correlations identified as “Low “. Class type coded: 1 = elective, 2 = required; Gender: 1 = male, 2 = female; Instructor Type: 1 = professor, 2 = graduate student; Instructor Gender: 1 = male, 2 = female.

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

Table 4.21: Point-biserial correlations between dichotomous nominal and interval variables for objective sub-points (f – i)
Table 4.22 lists the summated means for the groups identified in sub-points (f – i).

<table>
<thead>
<tr>
<th>Obj.</th>
<th>Verbal</th>
<th>Nonverbal</th>
<th>Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (f) Class Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3.19 (.64)</td>
<td>3.78 (.48)</td>
<td>3.13 (.82)</td>
</tr>
<tr>
<td>Required</td>
<td>2.71 (.80)</td>
<td>3.52 (.66)</td>
<td>2.78 (.91)</td>
</tr>
<tr>
<td>3 (g) Student Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.77 (.80)</td>
<td>3.47 (.64)</td>
<td>2.81 (.87)</td>
</tr>
<tr>
<td>Female</td>
<td>2.87 (.76)</td>
<td>3.77 (.57)</td>
<td>2.96 (.94)</td>
</tr>
<tr>
<td>3 (h) Instructor Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professor</td>
<td>2.80 (.82)</td>
<td>3.63 (.62)</td>
<td>2.82 (.92)</td>
</tr>
<tr>
<td>Graduate Student</td>
<td>2.82 (.71)</td>
<td>3.39 (.66)</td>
<td>2.96 (.80)</td>
</tr>
<tr>
<td>3 (i) Instructor Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.74 (.79)</td>
<td>3.56 (.65)</td>
<td>2.82 (.93)</td>
</tr>
<tr>
<td>Female</td>
<td>2.98 (.76)</td>
<td>3.63 (.61)</td>
<td>2.98 (.81)</td>
</tr>
</tbody>
</table>

Note. Numbers in parenthesis indicate standard deviation

Variables scaled from 1 (Never) to 5 (Very Often)

Table 4.22: Mean values for sub-points (f – i)

Additional information regarding the level of association identified in Table 4.21 was evidenced in the student means. The mean verbal immediacy difference between class types was 0.48 and the mean nonverbal immediacy difference based on student gender was 0.30.
Objective 4

Explore the relationship between the independent demographic variables and the dependent constructs.

Objective 4 sought to explore the relationship between the demographic variables and the motivational constructs of self-efficacy and task value. Multichotomous nominal characteristics were analyzed with interval level summed means to determine possible Eta correlations. Dichotomous nominal and interval level data were analyzed using a point-biserial correlation. Frequencies and means for sub-points of objective 4 were reported. Sub-points of objective 4 were grouped for the purpose of reporting in the following manner: (a – c), (d – e), (f – i).

Objective 4: Sub-points (a – c)

a) Is there a relationship between class rank and the motivation constructs?

b) Is there a relationship between class section and the motivational constructs?

c) Is there a relationship between class meeting time and the motivational constructs?

Table 4.13, listed earlier in the text, describes the demographic characteristics and frequency breakdown of sub-points (a – c). Table 4.23 describes the association between
the demographic variables and the motivational constructs. Table 4.24 details the mean values for the characteristics examined in sub-points (a – c).

<table>
<thead>
<tr>
<th>Obj.</th>
<th>Nominal Variable</th>
<th>Interval Variable</th>
<th>Value</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (a)</td>
<td>Class Rank</td>
<td>x Self-efficacy</td>
<td>.18</td>
<td>Very Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Task Value</td>
<td>.06</td>
<td>Very Low</td>
</tr>
<tr>
<td>4 (b)</td>
<td>Class Section</td>
<td>x Self-efficacy</td>
<td>.04</td>
<td>Very Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Task Value</td>
<td>.01</td>
<td>Very Low</td>
</tr>
<tr>
<td>4 (c)</td>
<td>Class Time</td>
<td>x Self-efficacy</td>
<td>.19</td>
<td>Very Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Task Value</td>
<td>.06</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

Table 4.23: Eta correlations between nominal and interval variables for objective 4 sub-points (a – c)

The correlations evidenced in Table 2.23 were all considered to be very low. The results indicated little relationship between class rank, class section, and class time with the motivational self-efficacy and task value constructs.
<table>
<thead>
<tr>
<th>Obj.</th>
<th>Class Rank</th>
<th>Self-Efficacy</th>
<th>Task Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (a)</td>
<td>Class Rank</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freshman</td>
<td>4.67 (1.27)</td>
<td>4.74 (1.45)</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td>5.04 (1.30)</td>
<td>4.87 (1.41)</td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td>5.23 (1.26)</td>
<td>4.91 (1.50)</td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td>5.33 (1.40)</td>
<td>4.74 (1.56)</td>
</tr>
<tr>
<td>4 (b)</td>
<td>Class Section</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lecture</td>
<td>5.10 (1.32)</td>
<td>4.84 (1.48)</td>
</tr>
<tr>
<td></td>
<td>Laboratory</td>
<td>5.19 (1.40)</td>
<td>4.77 (1.61)</td>
</tr>
<tr>
<td></td>
<td>Recitation</td>
<td>4.99 (1.32)</td>
<td>4.84 (1.49)</td>
</tr>
<tr>
<td>4 (c)</td>
<td>Class Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early Morning</td>
<td>4.96 (1.30)</td>
<td>4.89 (1.39)</td>
</tr>
<tr>
<td></td>
<td>Middle of the Day</td>
<td>5.23 (1.35)</td>
<td>4.84 (1.60)</td>
</tr>
<tr>
<td></td>
<td>Late Afternoon</td>
<td>5.26 (1.17)</td>
<td>4.82 (1.50)</td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td>4.01 (1.26)</td>
<td>4.40 (0.89)</td>
</tr>
</tbody>
</table>

Note. Numbers in parenthesis indicate standard deviations

Self-efficacy and task value scaled from 1 (Not at all true of me) to 7 (Very true of me)

Table 4.24: Mean values for objective 4 sub-points (a - c)

**Objective 4: Sub-points (d) and (e)**

*d) Is there a relationship between instructor age and the motivational constructs?*

*e) Is there a relationship between class size and the motivational constructs?*
Table 4.16 contains the frequency breakdown for sub-points (d) and (e). Table 4.25 describes the Eta correlation between the variables, and Table 4.26 lists the mean values for the summated motivational constructs.

<table>
<thead>
<tr>
<th>Obj.</th>
<th>Nominal Variable</th>
<th>Interval Variable</th>
<th>Value</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (d) Instructor Age</td>
<td>x Self-efficacy</td>
<td>.105</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X Task Value</td>
<td>.261</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>4 (e) Class Size</td>
<td>x Self-efficacy</td>
<td>.223</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x Task Value</td>
<td>.153</td>
<td>Very Low</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.25: Eta correlations between nominal and interval variables for objective 4 sub-points (d) – (e)
<table>
<thead>
<tr>
<th>Instructor Age</th>
<th>Self-Efficacy</th>
<th>Task Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>4.99 (1.39)</td>
<td>4.61 (1.50)</td>
</tr>
<tr>
<td>30-39</td>
<td>4.93 (1.40)</td>
<td>4.55 (1.68)</td>
</tr>
<tr>
<td>40-49</td>
<td>5.10 (1.23)</td>
<td>4.61 (1.43)</td>
</tr>
<tr>
<td>50-59</td>
<td>5.27 (1.19)</td>
<td>5.31 (1.18)</td>
</tr>
<tr>
<td>60-69</td>
<td>4.98 (1.72)</td>
<td>5.04 (1.46)</td>
</tr>
<tr>
<td>70 or more</td>
<td>5.75 (.00)</td>
<td>2.00 (.00)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class Size</th>
<th>Self-Efficacy</th>
<th>Task Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-29</td>
<td>5.06 (1.32)</td>
<td>4.90 (1.49)</td>
</tr>
<tr>
<td>30-59</td>
<td>5.47 (1.19)</td>
<td>4.84 (1.57)</td>
</tr>
<tr>
<td>60-89</td>
<td>5.38 (1.26)</td>
<td>5.21 (1.42)</td>
</tr>
<tr>
<td>90-119</td>
<td>4.61 (.96)</td>
<td>4.35 (1.10)</td>
</tr>
<tr>
<td>120-149</td>
<td>5.02 (1.63)</td>
<td>4.46 (1.72)</td>
</tr>
<tr>
<td>150 or more</td>
<td>4.66 (1.39)</td>
<td>4.73 (1.47)</td>
</tr>
</tbody>
</table>

Note. Numbers in parenthesis indicate standard deviations

Table 4.26: Mean values for objective 4 sub-points (d) – (e)

**Objective 4: Sub-points (f – i)**

f) Is there a relationship between class type and the motivational constructs?

g) Is there a relationship between student gender and the motivational constructs?

h) Is there a relationship between instructor type and the motivational constructs?

i) Is there a relationship between instructor gender and the motivational constructs?
Table 4.20 contains the frequency breakdown for sub-points (f – i). Table 4.27 describes the point-biserial correlations between the variables, and Table 4.28 lists the mean values for the summated motivational constructs.

<table>
<thead>
<tr>
<th>Obj.</th>
<th>Sub-point</th>
<th>Type</th>
<th>Self-Efficacy</th>
<th>Task Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (f)</td>
<td>Class type</td>
<td>Point-biserial</td>
<td>-.168*</td>
<td>.035</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.015</td>
<td>.618</td>
</tr>
<tr>
<td>4 (g)</td>
<td>Gender</td>
<td>Point-biserial</td>
<td>.083</td>
<td>.169*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.233</td>
<td>.015</td>
</tr>
<tr>
<td>4 (h)</td>
<td>Instructor Type</td>
<td>Point-biserial</td>
<td>-.038</td>
<td>-.072</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.587</td>
<td>.305</td>
</tr>
<tr>
<td>4 (i)</td>
<td>Instructor Gender</td>
<td>Point-biserial</td>
<td>.043</td>
<td>.070</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.535</td>
<td>.317</td>
</tr>
</tbody>
</table>

Note. Correlations, unless noted, were identified by the adjective of “Very Low”

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

Table 4.27: Point-biserial correlations between dichotomous nominal and interval variables for objective 4 sub-points (f – i)
Table 4.28: Mean group values for objective 4 sub-points (f – i)

Results of objective 4 sub-points (f – i) indicated relatively little relationship between the demographic variables and the motivational constructs of self-efficacy and task value. Respondents demonstrated increased self-efficacy in elective courses, and female students had a higher self-efficacy than males. Task value differences were slight with the exception of student gender.
**Objective 5:**

Explore the relationship between the independent constructs of verbal immediacy, nonverbal immediacy, autonomy, and the dependent motivational constructs of self-efficacy and task value.

a) Is there an association between verbal immediacy and self-efficacy?
b) Is there an association between verbal immediacy and task value?
c) Is there an association between nonverbal immediacy and self-efficacy?
d) Is there an association between nonverbal immediacy and task value?
e) Is there an association between autonomy and self-efficacy?
f) Is there an association between autonomy and task value?

Objective 5 sub-points (a – f) were analyzed together. Pearson Product moment correlations were run to determine possible association between independent and dependent variables (King & Minium, 2008). Table 4.29 describes the association between the independent constructs of verbal immediacy, nonverbal immediacy and autonomy, and the dependent motivational constructs of self-efficacy and task value.
<table>
<thead>
<tr>
<th></th>
<th>Nonverbal Immediacy</th>
<th>Autonomy</th>
<th>Self-efficacy</th>
<th>Task value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verbal Immediacy</strong></td>
<td>Pearson Correlation</td>
<td>.601*</td>
<td>.819*</td>
<td>.334*</td>
</tr>
<tr>
<td>Adjective b</td>
<td>Strong</td>
<td>Very High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Nonverbal Immediacy</strong></td>
<td>Pearson Correlation</td>
<td>--</td>
<td>.538*</td>
<td>.209*</td>
</tr>
<tr>
<td>Adjective b</td>
<td>Moderate</td>
<td>Low</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.002</td>
<td>.029</td>
<td></td>
</tr>
<tr>
<td><strong>Autonomy</strong></td>
<td>Pearson Correlation</td>
<td>--</td>
<td>.331*</td>
<td>.243*</td>
</tr>
<tr>
<td>Adjective b</td>
<td>Low</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-efficacy</strong></td>
<td>Pearson Correlation</td>
<td>--</td>
<td>--</td>
<td>.545*</td>
</tr>
<tr>
<td>Adjective b</td>
<td></td>
<td></td>
<td></td>
<td>Moderate</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

*Denotes independent variables. b Adjectives according to Bartz, 1999.

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

Note. n=208

Table 4.29: Relationship between independent and dependent variables
Verbal and nonverbal immediacy evidenced a strong correlation. Verbal immediacy has a very high correlation with autonomy and low association with self-efficacy and task value. Nonverbal immediacy evidenced a low association with self-efficacy and a very low relationship with task value. Autonomy evidenced a low association with both self-efficacy and task value. The motivational constructs of self-efficacy and task value demonstrated a moderate correlation.

Correlational values were squared to determine the coefficient of determination. The $r^2$ values represent the proportion of the Y variance that is associated with differences in X (King & Minium, 2008). Table 4.30 lists the $r^2$ value associated with the independent and dependent variables.
<table>
<thead>
<tr>
<th></th>
<th>Verbal Immediacy</th>
<th>Nonverbal Immediacy</th>
<th>Autonomy</th>
<th>Self-efficacy</th>
<th>Task value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Immediacy</td>
<td>Pearson Correlation</td>
<td>--</td>
<td>.601*</td>
<td>.819*</td>
<td>.334*</td>
</tr>
<tr>
<td></td>
<td>Coefficient of Determination (r²)</td>
<td>.36</td>
<td>.67</td>
<td>.11</td>
<td>.06</td>
</tr>
<tr>
<td>Nonverbal Immediacy</td>
<td>Pearson Correlation</td>
<td>--</td>
<td>.538*</td>
<td>.209*</td>
<td>.152*</td>
</tr>
<tr>
<td></td>
<td>Coefficient of Determination (r²)</td>
<td>.29</td>
<td>.04</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td>Pearson Correlation</td>
<td>--</td>
<td>.331*</td>
<td>.243*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coefficient of Determination (r²)</td>
<td>.11</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Pearson Correlation</td>
<td>--</td>
<td>--</td>
<td>.545*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coefficient of Determination (r²)</td>
<td>--</td>
<td>.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n=208

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

Table 4.30: Variance explained by the association between independent and dependent variables
Chapter 4 contained five main objectives and corresponding sub-points. All objectives were examined and results displayed through the use of both tables and text. Objective 1 described the respondents, and the assessed instructor, based on demographic variables.

Objective 2 sought to examine the construct validity of verbal immediacy, nonverbal immediacy and autonomy through the use of factor analysis. Results were problematic as nonverbal and verbal immediacy tended to load on multiple factors. After further analysis, and based on past research, the constructs of verbal and nonverbal immediacy were retained in the format intended by the instrument developers. Autonomy did load on one specific factor and cross-loaded with the verbal immediacy questions. Thus, the autonomy instrument was also retained as measuring a single construct of autonomy-supportive behaviors.

Objective 3 examined the relationship between the major independent variables and the demographic variables. Frequencies, Eta and point-biserial correlations, and descriptive group means were examined. Results of the correlations showed little relationship with the major independent variables. Comparison of the group means evidenced several interesting trends for further analysis.

Objective 4 sought to explore the relationship between the demographic variables and the dependent constructs of self-efficacy and task value. Eta and point-biserial correlations revealed little association. However, group mean scores yielded several possible areas for subsequent analysis.
Objective 5 sought to explore the relationship between the independent constructs of verbal immediacy, nonverbal immediacy, and autonomy and the dependent motivational constructs of self-efficacy and task value. Results indicated a low to very low relationship between the independent and dependent variables. Amount of variance was also examined with the dependent variables accounting for a minimal amount of the variance in the independent constructs.
CHAPTER 5

CONCLUSIONS, IMPLICATIONS & RECOMMENDATIONS

Statement of the Problem

When a teacher steps into a classroom, they enter into a relationship with the learners. The nature of the relationship is dynamic; teachers interact with students, and students interact with the instructor, creating a classroom environment. Identifying the influencers of this relationship is difficult. Commonly, researchers identify high inference variables such as friendliness, personality, and approachability. While these influences play a role in the teacher-student relationship, variables such as friendliness, personality, and approachability are difficult to quantify and extremely difficult to objectively measure.

Communication, both verbal and non-verbal, directly impacts the physical, psychological, and emotional manner in which students interact with their surrounding environment (Mehrabian, 1981). If meaningful education is to occur, teachers must be equipped with the knowledge and skills necessary to foster an emotionally safe and secure classroom (Darling-Hammond & Bransford, 2005).
Classroom messages are constantly transmitted via a measure of verbal and non-verbal communication known as teacher immediacy. Immediacy, originally described by Albert Mehrabian, is defined as those communication behaviors that “enhance closeness to and nonverbal interaction with another” (1969, p. 203). The theory of immediacy highlights the relational nature of communication and the inherent relevance of communication as a means to either increase or decrease student motivation.

In addition to immediacy, teachers have the opportunity to shape the classroom climate in a manner which either supports or undermines student autonomy. According to Deci et al. (1982) and Reeve et al. (1999), teachers can learn specific low inference tactics to improve and increase student autonomy. Course instructors hold a very influential position in the creation of classroom climate (Deci et al., 1991). Wentzel and Wigfield (1998) emphasized the importance of teacher support and stated that “. . . perceived support from teachers has been related to positive motivational outcomes, including the pursuit of goals to learn and to behave prosocially and responsibly, educational aspirations and values, and self concept” (pp.168-169). Wentzel and Wigfield (1998) stated:

We also propose that the social context within which learning takes place can have a powerful influence on students’ academic and social motivation at school. In particular, teachers’ instructional practices as well as the quality of their interpersonal interactions with students appear to make critical contributions to students’ motivation and performance (p. 156).

Student motivation has been identified as a critical component to student success (Brophy, 1988; Deci et al., 1991; Pintrich & Schunk, 2002). Effective teachers must understand and recognize their ability to either positively or negatively impact student
motivation. Self-efficacy and expectancy-value are two motivational constructs capable of bolstering student motivation (Bandura, 1986; Pajares, 1997; Wigfield & Eccles, 2000).

Jere Brophy recognized the relationship between teacher behaviors and student motivation. In 2004, referring specifically to factors which increase student motivation, Brophy stated that teachers needed to “learn to use timing, nonverbal expressions and gestures, and cueing and other verbal techniques to project a level of intensity that tells students that material is especially important and deserves close attention” (p. 276). Teacher immediacy and motivation have the ability to significantly improve both teacher performance and student motivation, and as a result, they are vital to education and worthy of research.

Researchers have long recognized the need for research which examines both teacher immediacy and student motivation. Gorham and Christophel (1992) stated:

Given the attention to motivational concerns that appear in both the educational psychology literature and in popular press discussions of educational outcomes, we are convinced that continuing to explore the relationship of teachers’ communication behaviors to student motivation has both pedagogical and practical salience. (p. 251)

Furthermore, Stefanou, et al. (2004) stated that “there is a recognized need for studies that provide rich details from the classroom to help expand our understanding of the relationships between student motivation, how such motivation is expressed, and instructional practices” (p. 98).

The theory of immediacy considers and identifies verbal and nonverbal communication messages, yet is rarely connected with specific measurements of student motivation. Thus, the need exists to identify whether or not teacher immediacy influences, or is associated with, corresponding self-efficacy and task value student motivation.
Wentzel and Wigfield (1998) stated that “researchers need to explore further how different classroom and interpersonal contexts influence students’ academic and social motivation” (p. 170). Based on the expressed need of previous researchers, the purpose of this study was to examine the relationship between low inference immediacy behaviors, high inference autonomy-supportive behaviors, and student self-efficacy and task value motivation.

Purpose of the Study

The purpose of the study was to examine the relationship between teacher communication and student motivation. The overall hypothesis, which served as a foundation for this research, was that teacher communication behaviors would be associated with student motivation. Specifically, teacher communication (verbal immediacy, nonverbal immediacy, and autonomy-support) will be associated with student self-efficacy and task value motivation.

Conceptually, teacher communication resides under the overarching construct of teacher effectiveness. Teachers, in a variety of ways, are judged on their overall effectiveness. As hypothesized by this research, teacher communication is a critical element of teacher behaviors and thus reflective of teacher effectiveness. Teacher communication comprises the independent variables of verbal immediacy, nonverbal immediacy, and autonomy-supportive teacher behaviors. The presumed dependent variables included elements of student motivation as expressed by student self-efficacy and task value motivation. The objectives guiding and underlying this study are indicated below.
Objectives of the Study

1. Describe the population based on demographic independent variables.
2. Determine the common factors of immediacy and classroom climate.
3. Explore the relationship between the common factors and demographic variables.
4. Explore the relationship between the independent demographic variables and student motivation.
5. Explore the relationships between the independent common factors and the dependent motivational constructs of self-efficacy and task value.

Conclusions of the Study

Conclusion 1

Teacher communication appears to be associated with student self-efficacy and task value motivation. However, the amount of association and the variance explained remains relatively small.

Examination of the relationship between the independent and dependent variables revealed relatively low levels of association. Verbal immediacy had a low correlation with self-efficacy and task value. Nonverbal immediacy evidenced a low association
with self-efficacy and a very low association with task value. Autonomy evidenced a low association with self-efficacy and a low association with task value.

All measures of association between the independent and dependent variables yielded a statistically significant result. However, based on the non-representative sampling method and the influence of the size of the sample, statistical significance should be interpreted with caution. It is important to note that a statistically significant correlation means the observed results are likely to be observed in the population. King and Minium (2008) cautioned against the flippant use of statistically significant correlations. King and Minium advised to, “Be careful, a significant $r$ does not mean that the association is important. The expression “significant correlation” means only that $H_0: \rho = 0$ has been tested and rejected, and “nonsignificant correlation” means only that $H_0: \rho = 0$ has been tested and retained—nothing more, nothing less” (p. 290).

Cohen (1988) developed a list of effect size descriptors for describing the magnitude of a correlation. Cohen listed $r = .10$ ($r^2 = .01$) as a small effect size, $r = .30$ ($r^2 = .09$) as a medium effect size, and $r = .50$ ($r^2 = .25$) as a large effect size. Based on the descriptive categories identified by Cohen, the effect sizes between self-efficacy and verbal immediacy, and between self-efficacy and autonomy would be considered as medium. The effect sizes between nonverbal immediacy and self-efficacy, and between verbal immediacy, nonverbal immediacy, autonomy and task value would be considered small.

The coefficient of determination ($r^2$) was the measure used to further describe the results. The coefficient of determination, as well as the effect size descriptor, are two important indicators of the practical significance of the findings (King & Minium, 2008).
Research indicated that 11 percent of the variance in self-efficacy can be explained by verbal immediacy, and four percent of the variance in self-efficacy can be explained by nonverbal immediacy. In addition, 11 percent of the variance in self-efficacy can also be explained by a teachers’ use of autonomy-supportive behaviors. Specific to task value, six percent of the variance can be explained by verbal immediacy, two percent by nonverbal immediacy, and six percent by autonomy. Both effect size and coefficient of determination provide insight as to the practical significance of the association results.

**Implications and Recommendations for Conclusion 1**

Only 11 percent of the variance in self-efficacy was explained by teachers’ verbal immediacy. While this may not seem to be practically significant, it is important to recognize this research does not address the amount of student self-efficacy that is dependent on, or influenced solely, by the environment. In fact, Bandura established that the amount of influence of the triadic determinants [(a) personal factors in the form of cognition, affect, and biological events, (b) behavior, and (c) environmental influences] would vary from individual to individual. Bandura (1986) stated that, “The relative influence exerted by the three sets of interacting factors will vary for different activities, different individuals, and different circumstances” (p. 24). It is possible that the environmental influences to self-efficacy may only account for a portion of student variance in self-efficacy. A mere 11 percent may be a sizeable portion when considering the potential overall influence of environmental factors.
Nonverbal immediacy accounts for four percent of the variance in self-efficacy. Based on the results of this research, very little variance in self-efficacy can be explained by nonverbal immediacy.

Around 11 percent of the variance in self-efficacy can be attributed to autonomy-supportive behaviors of the instructors. The manner in which instructors provide students with the opportunities and the freedom to engage in learning appears to positively relate to student self-efficacy. In terms of implications, autonomy-supportive behaviors can be closely linked to principles of learner-centered instruction, thus providing indirect support for the establishment of a learner-centered learning environment (Black & Deci, 2000).

The relationship between verbal immediacy, nonverbal immediacy, and autonomy on task value was minimal. Task value appears to be a motivation trait which bears little relationship with teacher communication. Similar to self-efficacy, it is important to recognize that there may be only a small portion of task value that is able to be influenced by the instructor. Thus, six percent of the variance may be a sizeable portion of the variance which is able to be associated with the instructor.

Instructors need to be aware of the manner in which instructor communication is associated with student self-efficacy. While the association appears small, instructors should recognize the possibility that only a small portion of self-efficacy is influenced by the environment. For example, if only 30 percent of the students’ self-efficacy is associated with the environment, then verbal immediacy actually accounts for around 37 percent of the possible environmental influences on self-efficacy. Verbal immediacy behaviors can be encouraged and developed through the use of praise for student efforts,
humor, self-disclosure, willingness to engage students in conversation, and overall openness and willingness to meet and interact with students (Edwards & Edwards, 2001; Gorham, 1988). Nonverbal immediacy behaviors can be encouraged through the use of eye contact, body position, physical proximity, personal touch, and body movement (Richmond, Gorham, & McCroskey 1987).

Instructors should be encouraged to explore and employ the use of autonomy-supportive behaviors. Instructors who provide students with academic and intellectual freedom will have a greater likelihood of promoting student self-efficacy and student task value. According to Reeve et al. (1999), autonomy supportive behaviors could be encouraged through the use of teacher instructional behaviors which exert a significant influence on student feelings of autonomy including: time spent talking, and time given to students for independent work. Teacher conversational behaviors which are associated with student autonomy include: praises of quality of performance, questions of what the student wants, responses to student-generated questions and empathetic, perspective-taking statements. Instructors who take the time to promote autonomy in the classroom will tend to develop autonomously motivated students. Students who are autonomously motivated, according to Grolnick, Ryan, and Deci (1991), report increased motivation to complete schoolwork, evidence greater conceptual learning, and greater memory retention.

Research should be conducted to explore the similarities between autonomy-supportive behaviors and learner-centered instruction. Perhaps both constructs have the potential to interact as positive contributors to student engagement and classroom learning.
Conclusion 2

Several mean differences were evident when considering both the independent demographic variables and the dependent motivational constructs.

Several of the research questions examined the differences between demographic variables and the motivational constructs of self-efficacy and task value. An analysis of the descriptive data revealed that the students sampled represented a variety of ranks and the actual courses assessed included 48 different course prefixes. The sample was 64 percent male and 36 percent female.

To descriptively highlight the differences between mean scores, the researcher provided measures of effect size. Effect size measurements were made utilizing Cohen’s $d$ (1988). Effect size was generated using the Devilly (2005) version 2.3 Effect Size Generator. Adjectives for the description of effect size were calculated utilizing Cohen’s (1988) interpretation of effect size. Table 5.1 lists Cohen’s effect size descriptors.

<table>
<thead>
<tr>
<th>Value of $d$</th>
<th>Adjective for Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 to 0.2</td>
<td>Trivial</td>
</tr>
<tr>
<td>0.2 to 0.5</td>
<td>Small</td>
</tr>
<tr>
<td>0.5 to 0.8</td>
<td>Moderate</td>
</tr>
<tr>
<td>0.8 and higher</td>
<td>Strong</td>
</tr>
</tbody>
</table>

Table 5.1: Cohen’s interpretation of effect sizes (1988)
As students move from freshman to senior (Obj. 3a) they reported increased verbal immediacy. Freshman reported verbal immediacy scores of 2.57 (SD = .75) and seniors report 2.92 (SD = .76) yielding a small effect size of $d = .46$. Nonverbal immediacy evidenced no major mean differences based on class rank. Autonomy, as might be expected, increased with class rank. Freshman reported an autonomy mean of 2.59 (SD = .67) and seniors reported 2.99 (SD = .91) for a moderate effect size of $d = .50$.

Class section (3b) -- whether lecture, laboratory, or recitation -- had little relationship with verbal immediacy, nonverbal immediacy, or autonomy. Class time evidenced a drop in verbal immediacy between late afternoon 2.92 (SD = .82) and evening classes 2.29 (SD = .67). The verbal immediacy difference resulted in a strong effect size of $d = .84$. However, a small number of respondents indicated assessing evening classes. Nonverbal immediacy is fairly stable based on class time with a mean decrease once again for evening classes. Autonomy evidences a decrease as well based on the evening classes. Based on the interesting results of the evening classes, the researcher examined the course prefixes and the number of courses assessed by the evening respondents. Theoretically, there is a possibility that a majority of the eight respondents could be reporting the same class. Analysis of the evening class respondents revealed four students indicated a chemistry class, one respondent a computer science class, one respondent a construction systems management class, and two respondents a math class. In light of the nature of the classes assessed, and the small sample size, it is not surprising to see a mean value decrease in the evening class respondents.
The assessments of instructor age (3d) and class size (3e) synthesized both graduate students and professors in the same assessment. Based on prior research (Velez & Cano, 2008), the researcher separated the mean values based on instructor type (professor or graduate student—see table 4.19). Once separated, the graduate student means for verbal and nonverbal immediacy were slightly higher than the professor means. The autonomy means were slightly higher as well. However, when class size is taken into account, the mean values are reversed, with graduate students displaying a slightly lower incidence of verbal, nonverbal and autonomy behaviors.

Instructor age appears to have little association with the respondent means. The mean score increased with every age category, peaking at age 50-59 with a mean of 3.07 (n = 59, SD = .78) and decreasing for age category 60-69 and 70 or more. Nonverbal immediacy evidenced a similar pattern beginning with an age 20-29 year old mean of 3.27 (n =9, SD = .82) increasing until 50-59 year old mean of 3.80 (n = 59, SD = .62). Just like verbal immediacy, after the 50-59 year age category, nonverbal immediacy began to taper off. Autonomy evidenced a similar pattern with mean values increasing until age 50-59 and then tapering off slightly. There appeared to only be a slight decrease in the mean values of professors age 60-69.

Class size appeared to be associated with mean values as well. Verbal immediacy was highest for class sizes of 0-29 ( \(\bar{x} = 3.19, \text{ SD} = .76\) ) and decreased as class size increased for a verbal immediacy mean score of 2.23 (SD = .53) for a class size of 150 or more students. The verbal immediacy effect size difference between a class size of 0-29 and 150 or more was strong at \(d = 1.46\).
Not surprisingly, nonverbal immediacy was fairly consistent despite changes in class size. Autonomy, on the other hand, followed a pattern similar to verbal immediacy with a steady decrease as class size increases. A class with the size of 0-29 had a mean value of 3.13 (SD = .92) and class sizes 150 or greater had a mean value of 2.26 (SD = .65), resulting in a strong effect size of $d = 1.09$.

Comparison between means based on class type (3f, elective vs. required) indicated that students rate the instructors of elective courses as higher in verbal immediacy, nonverbal immediacy, and autonomy. Female students tended to report slightly higher levels of verbal, nonverbal, and autonomy type instructor behaviors (Table 4.22). Instructor type (3h, professor vs. graduate student) mean comparison evidenced very similar verbal, nonverbal and autonomy mean values. In terms of instructor gender (3i), female instructors resulted in higher mean values in verbal, nonverbal, and autonomy-supportive behaviors (Table 4.22).

**Demographic Mean Values for Student Motivation Constructs of Self-efficacy and Task Value**

The comparisons between the demographic variables and the respondent mean values of self-efficacy and task value yielded several important clues as to the nature of both self-efficacy and task value. Based on class rank (4a), self-efficacy means increased from freshman through senior standing (Table 4.24). Freshmen reported a mean value of 4.67 (SD = 1.27) increasing to a senior mean of 5.33 (SD = 1.40) yielding a small effect size of $d = .49$. Examination of task value based on class rank evidenced slight increases until the junior year and then a slight decrease for the senior year.
Class section (4b) evidenced a slightly higher self-efficacy mean for laboratory classes and little to no difference between lecture, laboratory, and recitation in relation to task value. Examination of the role of class time in respondent self-efficacy revealed increased self-efficacy mean values based on class time through late afternoon classes \((\bar{x} = 5.26, \ SD = 1.17)\) with a substantial drop in self-efficacy for evening classes \((\bar{x} = 4.01, \ SD = 1.26)\). It is important to recognize the previously mentioned course prefixes which comprised the respondents in the evening category. Quite possibly, the evening category is not representative of what the results would be with a larger, more diverse sample. Task value appeared relatively unchanged based on class time with a slight decrease in the mean scores for the evening class respondents.

Instructor age (4d) appeared to have a minimal relationship on student self-efficacy with the exception of a slight mean value increase in the 50-59 age category. Instructor age evidenced no relationship between the mean values of task value with the highest reported mean value for the courses taught by instructors age 50-59 (Table 4.26). Class size (4e) did not evidence a mean value pattern in either self-efficacy or task value.

Respondents reported higher self-efficacy mean values for elective courses \((\bar{x} = 5.52, \ SD = 1.06)\) than required courses \((\bar{x} = 4.96, \ SD = 1.35)\) yielding a small effect size of \(d = .46\). The respondents also evidenced a slightly higher task value score for required courses (Table 4.28). Regarding student gender, females had higher self-efficacy and task value mean values with the largest mean difference in task value. Females reported a task value mean score of 5.16 (SD = 1.41) and males reported a task value mean score of 4.64 (SD = 1.48) yielding a small effect size of \(d = .36\). Respondents reported a higher mean value for self-efficacy and task value when assessing a course taught by a professor
The respondents indicated slightly lower levels of self-efficacy and task value in courses taught by graduate students.

Instructor gender evidenced little differences in student self-efficacy and task value. However, female instructors had higher mean values for self-efficacy (5.18 for females and 5.05 for males) and task value (4.99 for females and 4.77 for males).

Implications and Recommendations of Demographic Mean Values for Verbal Immediacy, Nonverbal Immediacy, and Autonomy

As students age they reported increasing levels of verbal immediacy. Nonverbal immediacy was a fairly stable construct that remained steady despite student age. Autonomy-supportive behaviors, as measured by the Learning Climate Questionnaire (LCQ), steadily increased with student grade level.

Freshmen enter first year courses at a vulnerable stage in their educational careers. Therefore, instructors should make every effort to display positive, encouraging, and supportive, verbal immediacy behaviors. Instructors need to be aware of nonverbal communication. Despite student class rank differences, students seem to perceive similar amounts of nonverbal immediacy. Instructors need to be aware of the influential nature of nonverbal immediacy and strive to send supporting signals during the students’ formative years. Autonomy-supportive behaviors seem to be employed by instructors more readily during the later educational years. Instructors need to increase early opportunities for student autonomy, facilitating increased intrinsic interest and motivation (Deci et al., 1991; Deci & Ryan, 2002). According to Reeve et al. (1999), autonomy supportive behaviors could be encouraged through the use of teacher instructional
behaviors which exert a significant influence on student feelings of autonomy including:
time spent talking, and time given to students for independent work. Teacher
conversational behaviors which significantly influence student autonomy include: praises
of quality of performance, questions of what the student wants, responses to student-
generated questions and empathetic, perspective-taking statements. Instructors who take
the time to promote autonomy in the classroom will tend to develop autonomously
motivated students. Students who are autonomously motivated, according to Grolnick,
Ryan, and Deci (1991), report increased motivation to complete schoolwork, evidence
greater conceptual learning, and greater memory retention.

Class section (3b) had little impact on reported verbal immediacy, nonverbal
immediacy, and autonomy. Instructors, as perceived by the respondents, display similar
levels of immediate and autonomy behaviors despite class section. This is an insightful
observation as instructors may tend to believe their opportunities for immediacy and
autonomy-supportive behaviors to vary based on class section. The results of this
research indicate relatively minimal differences between the three independent constructs
and lecture, laboratory, and recitation class sections.

Instructor age (3d) evidenced some relationship with verbal, nonverbal, and
autonomy behaviors. Instructors did increase in verbal, nonverbal, and autonomy-
supportive behaviors through the age categories, peaking at 50-59 years of age. On all
three independent variables, instructors seemed to display the greatest verbal, nonverbal
and autonomy behaviors between 50 and 59 years of age. There may be several plausible
reasons for this observation.
First, the instructor age category which contained the highest number of respondents was the 50-59 year age category. Perhaps, as the number of respondents in a given category increase, the means tend to migrate upward. While the researcher did consider this possibility, the means with sample sizes n=30 and n=45, do not increase markedly with instructor age, dispelling the conjecture that sample size may act in a prescribed manner to increase the mean values of verbal, nonverbal, and autonomy-supportive behaviors.

Another possible reason for the heightened display of verbal, nonverbal, and autonomy behaviors may be the professional and personal state of the instructors. The research did not assess whether the instructors were assistant, associate, or full professors. It can be reasonably concluded that the majority of instructors in the 50-59 age category were tenured. Perhaps tenured faculty believe they have the freedom to express themselves to a greater degree or, they learn from their professional experiences and have become less controlling.

Class size (3e) appeared to be associated with verbal immediacy and autonomy-supportive behaviors. Nonverbal immediacy remained fairly stable despite class size variations. The respondents reported a greater verbal immediacy and autonomy mean score relative to class sizes from 0-29. As class size increased, mean values decreased.

Results relating to class size indicated that instructors engaged in teaching larger class sizes exhibited less verbal immediate and autonomy-supportive behaviors. Previous research indicated that, specific to verbal immediacy, instructors tended to compensate as class size increased, resulting in a stable verbal immediacy score (Gorham, 1988). The
present results to not fully support the previous research. Several possible reasons for the observed mean value differences may exist.

One possible explanation for the observed mean difference may lie in the nature of small class sizes. Students engaged in smaller classes may feel, by nature of the intimate classroom size and atmosphere, a closer psychological relationship with the instructor. Students may be intimately involved in course discussions, allowing for greater evidence of instructor verbal immediacy and autonomy-supportive behaviors.

The apparent association between class size and verbal immediacy and autonomy behaviors should allow for a re-examination of the educational system. Small class sizes seem to facilitate a greater display of verbal and autonomy behaviors. Educators have long lauded the benefits of smaller class sizes, yet universities recognize the fiscal benefit of larger class sizes. Perhaps university administrators should consider which class size has the potential to provide the greatest educational and motivational benefit to the students.

Not surprisingly, students taking elective courses (3f) rated higher verbal, nonverbal, and autonomy mean values than those respondents referencing a required course. This seems philosophically sound as students who enroll in elective courses may display a heightened sense of engagement, purpose, and belonging prior to enrolling in the course. The predisposition towards the elective course may taint the respondents’ observations of verbal, nonverbal, and autonomy-supportive behaviors. Another plausible conjecture would be that elective classes may tend to have a smaller class size as well. Smaller class sizes may, as previously discussed, tend to increase the incidence of both verbal immediacy and autonomy-supportive behaviors.
Analysis of instructor gender (3i) revealed one interesting pattern. Respondents assessing female instructors reported higher mean values for verbal, nonverbal, and autonomy-supportive behaviors. According to the student responses, female instructors exhibit a greater frequency in the use of verbal, nonverbal, and autonomy-supportive behaviors.

The differences between instructors based on gender are small, yet female instructors appear to be more immediate and autonomy-supportive. This may relate to the actual nature of the classroom instruction or the results may be a byproduct of a societal view which portrays females as more verbal and more caring than their male counterparts. Further research should be conducted to examine possible immediacy and autonomy differences based on instructor gender.

Implications and Recommendations of Demographic Mean Values for Student Motivation Constructs of Self-efficacy and Task Value

Self-efficacy mean values (4a) increased based on class rank. As students progressed through their educational years, they reported higher self-efficacy means. This observation is in line with the underlying theory, and prior research of self-efficacy (Eccles & Midgley, 1989). Namely, students can and are influenced by mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states (Bandura, 1997). The researcher would also postulate that college students may be more sensitive and receptive to the social aspects of self-efficacy generation. Students are sensitive to mastery experiences, and mastery experiences -- pertaining to education -- are offered in college classes. Further, social influence is particularly high during the
college years, leading to an increased receptivity toward vicarious experiences. Lastly, college students are in the midst of developing an independent sense of their own physiological and affective moods. Conceivably, the development of physiological and affective states increases during the college years, resulting in an increase in self-efficacy.

The Bandura (1986) espoused concept of triadic reciprocality also provides theoretical implications for the observed self-efficacy mean scores. The three components of triadic reciprocality are behavior, environmental factors, and personal factors. Bandura described the three determinants as having the capability to exert a multiplicity of influences on each other (Bandura, 1986). The researcher concurs with the Bandura assertion, yet would add that the nature of triadic reciprocality and the potential level of influence of each of the determinants may vacillate greatly depending on developmental maturity. For instance, mature adults may evidence a decreased influence from environmental sources, as well as a stabilizing effect from prior development of cognitive and affective factors. On the other hand, younger students may experience a highly dynamic and sensitive model of triadic reciprocality. Therefore, youthful respondents still active in emotional and physical development may be highly sensitized to the development of certain aspects of self-efficacy.

Instructors need to recognize the major sources of self-efficacy and seek to provide opportunities for students to increase in self-efficacy. Based on the current research, one of the ways instructors can enhance self-efficacy is through the development of autonomy-supportive behaviors. Autonomy-supportive behaviors appeared to account for around 11 percent of the variance in self-efficacy.
The mean values for task value followed a very logical and intuitive pattern. Freshmen increased in task value mean scores through out their junior year and then decreased in task value mean scores for their senior year. Seniors often displayed less task value in certain subjects. In fact, some people refer to seniors who show a decrease in desire/value for a task as exhibiting “senioritis.” The task value mean scores supported notion that seniors may tend to lesson the task value of academic and curricular tasks.

Instructor age (4d) was associated with self-efficacy and task value determinations. The respondents indicated higher mean scores in both self-efficacy and task value for instructors age 50-59. Further research should be conducted to examine the possible confounding variables which may influence the observed difference. Perhaps class size might be a confounding variable, or there may be some other influencing factors which results in students with instructors in the 50-59 year age category evidencing increased self-efficacy and task value.

The mean values for self-efficacy and task value varied somewhat in relation to student gender. In all measures of student motivation, female students evidenced higher mean scores. Female students were slightly higher in self-efficacy and noticeably higher in task value. The reasons for the difference in female scores remain obscure. Perhaps female students, once they reach certain levels, tend to perceive themselves as more capable, or perhaps they are simply more sensitive to their own self-efficacy. Female students value tasks at a greater level than the male students. Once again, the observed differences should be analyzed in conjunction with research pertaining to societal roles as well. In an effort to examine the differences between males and females, the researcher split the student gender file, and compared self-efficacy and task value means relating to
student age. Consistently, with one exception, female students ranging from freshmen to seniors had higher self-efficacy and task value scores. The one exception is senior female students who rated themselves lower on self-efficacy ($\bar{x} = 5.17$, $SD = 1.37$) than the senior males ($\bar{x} = 5.43$, $SD = 1.44$). Future researchers should consider examining self-efficacy and class rank in further detail.

Recommendations for the Study

During the course of the research process, the researcher encountered areas for future improvement. The research design and the placement of certain constructs provide two areas for future improvement. The following sections briefly detail researcher recommendations pertaining to replication of the study.

Instrument Selection

The nonverbal immediacy behaviors instrument is worthy of continued use. However, future researchers should examine, with a larger sample, the factorial validity of the instrument. Based on the results of this research, use of the verbal immediacy instrument for the purposes of assessing verbal immediacy was somewhat problematic. The VIB instrument may better represent a teacher effectiveness measure as opposed to a verbal immediacy assessment.
The Learning Climate Questionnaire (LCQ) represents an acceptable measure which appears to be measuring autonomy-supportive behaviors. The current study employed the use of the short six question version of the LCQ. Future studies should consider the use of the entire LCQ. Addition of the entire questionnaire may aid in the determination of the placement of the autonomy construct. The present study utilized autonomy as a measure of an independent construct. In future studies, researchers may want to closely examine the merits of placing autonomy as an independent or dependent variable.

Structural equation modeling should be utilized to examine the relationship between autonomy and the rest of the measured constructs. It is quite conceivable that instructor immediacy may be associated with the perception of autonomy-supportive behaviors. Autonomy-supportive behaviors may best function either as a dependent variable, or a mediating variable between teacher immediacy and student motivation. Review of the literature revealed clear support for the use of the LCQ as a dependent measure of student motivation. Perhaps use of the entire LCQ would allow for the enhanced ability to discriminate between autonomy as an independent versus dependent variable.

The MSLQ measure of self-efficacy was highly reliable and has a storied past as a valid instrument. Recommendations of the researcher would include continued use of the self-efficacy measurement. No appreciable grounds for change were noticed in the use of the self-efficacy measure.
The MSLQ measure of task value could be improved. The present study found the lack of clarity and discrimination between the sub-components of task value to be very concerning. The task value instrument yielded mixed results with supporting theory indicating possible interaction and depression of values, based on the attempt to simultaneously measure importance (attainment), interest, and utility task value. Future researchers may want to consider individual measures of the specific components of task value.

Sample Selection and Size

A drawback to the design of this study was the lack of a probability sample. Since the sample collection was non-probabilistic, the ability to use inferential statistics was limited. The researcher recommends future studies consider the possibility of probability sampling.

Despite the lack of probability sampling, the researcher was pleased with the relatively heterogeneity of the purposive sample. Respondents were diverse in gender and class rank, and indicated assessing 48 different course prefixes. The method of asking respondents to assess the course immediately preceding the course in which collection occurred greatly increased the variability of the sample. The researcher recommends continuation of the prior-course assessment method.

Two primary benefits would result from the use of probability sampling. First, data would be able to be analyzed with the unhindered use of inferential statistics. Second,
an assurance of representative variability would be increased. However, it is important to recognize that the nature of the collected sample did allow for the possibility of increased variability, despite the use of a purposive sample. The increased variability could only be achieved through the use of the prior-course assessment method.

The sample size was limiting in the use of factor analysis. Future research should seek to increase the sample size in an effort to lend stability and credibility to the generated factors. An increase in sample size would allow for additional clarity of the possible relationships between the demographic variables (class rank, gender, class type and other variables) and instructor immediacy and student motivation.

Scaling

The present study slightly altered the scaling of the LCQ (autonomy) and the MSLQ measures of self-efficacy and task value. For the purposes of creating a uniformly scaled independent variable questionnaire, the LCQ was altered in both scaling and descriptors. The scale was modified from a 1 to 7 point Likert to a 1 to 5 point Likert questionnaire. The nature of the LCQ enabled the altering of the scale descriptors from a previous *(Strongly disagree to Strongly agree)* to individual number descriptors of 1 (*Never*), 2 (*Rarely*), 3 (*Occasionally*), 4 (*Often*), and 5 (*Very often*). For instance, questions such as, “[my instructor] provides me choices and options,” and “listens to how I would like to do things” were deemed to fit with the individual frequency descriptors scaled from 1 (*Never*) to 5 (*Very often*).

The LCQ scaling change resulted in two observations. First, the opportunity for increased variability of the instrument was decreased. Two points of measurement were
removed from the scale resulting in a decrease in the potential for variability. Second, the descriptors on the scale were specific for a given response. Prior to this research, the LCQ was anchored on either end from strongly disagree to strongly agree. The addition of individual descriptors may have altered the results, in that; students may have been either more discriminating or less discriminating. The only indication of differences was the decrease in reliability from .85 to 0.90 (Black & Deci, 2000; Williams & Deci, 1996), and a pilot of 0.94 (Velez & Cano, 2007) to a post hoc (n = 208) Cronbach’s reliability of 0.85. Differences in the reliability could be attributable to either the scaling or the scale descriptor change. Future research should consider the use of the LCQ with its original scale and descriptors.

The self-efficacy and task value portions of the MSLQ were also slightly altered. For the purposes of this research, the original scale descriptors (Not at all true of me) and (Very true of me) were modified to read (Strongly disagree) and (Strongly agree). For instance, when answering the question, “I am very interested in the content area of this course,” participants were asked to rate their responses on a Likert-type questionnaire scaled from 1 (Strongly disagree) to 7 (Strongly agree). The change in scale descriptors resulted in a minimal change in the instrument reliability. Previous studies demonstrated Cronbach reliabilities of 0.90 (Duncan & McKeachie, 2005) and 0.86 (Velez & Cano, 2007). After the scale descriptor change, the pilot study revealed 0.83 reliability and a post hoc analysis revealed a reliability of 0.93. The results of the scale descriptor change provide no indication that the change resulted in a measurement threat. Future research is needed to explore the addition of individual scale descriptors as opposed to mere anchor
descriptors. Perhaps individual scale descriptors would allow respondents to further
discriminate in assessing personal self-efficacy and task value.

Summary of Recommendations

- When examining immediacy and autonomy, further research should consider
  utilizing the longer version of the learning climate questionnaire.

- Further research should examine the theoretical placement of autonomy as an
  independent versus dependent variable.

- Additional research should be conducted which utilizes the original scaling and
  descriptors of the MSLQ measures and the long version of the Learning Climate
  Questionnaire.

- Further research should be conducted, utilizing a larger sample size, which
  examines the factorial validity of the verbal immediacy behaviors instrument.

- Future research should examine immediacy and motivation variables through the
  use of structural equation modeling. Path analysis may allow for increased
  clarity in the relationships between the independent and dependent variables.
• To attempt to differentiate between student self-efficacy prior to the course and self-efficacy during the course, a longer, more sensitive measure of self-efficacy should be utilized.

• Individual classes should be analyzed, using the class as the unit of measure, and compared with individual instructors. In this manner, the researcher can better account for instructor demographic variables which may be associated with immediacy.

• Further research should consider the use of a probability sample, allowing for the use of inferential statistics.

• Research should be conducted to explore the similarities between autonomy-supportive behaviors and learner-centered instruction.
REFERENCES


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APPENDIX A

RESEARCH INSTRUMENTS
Nonverbal Immediacy Behaviors Instrument

Below are a series of descriptions of things some teachers have been observed doing or saying in classes. Please respond to the questions in terms of the course you take immediately preceding this class. For each item, circle the number 1-5 which indicates the behavior of the teacher in that class.

<table>
<thead>
<tr>
<th>Item</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Sits behind desk while teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Gestures while talking to the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Uses monotone/dull voice when talking to the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Looks at the class while talking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Smiles at the class while talking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Has a very tense body position while talking to the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Touches students in the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Moves around the classroom while teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Sits on a desk or in a chair while teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Looks at board or notes while talking to the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Stands behind podium or desk while teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Has a very relaxed body position while talking to the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Smiles at individual students in the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Uses a variety of vocal expressions when talking to the class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Verbal Immediacy Behaviors Instrument & Learning Climate Questionnaire (short version)

Please respond to the questions in terms of the **course you take immediately preceding this class**. For each item, circle the number 1-5 which indicates the **behavior of the teacher** in that class.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Uses personal examples or talks about experiences she/he has had outside of class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Asks questions or encourages students to talk</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Uses humor in class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. Provides me choices and options*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. Addresses students by name</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. Addresses me by name</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. Encourages me to ask questions*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. Gets into conversations with individual students before or after class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. I feel understood by my instructor*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. Has initiated conversations with me before, after or outside of class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. Refers to class as &quot;our&quot; class or what &quot;we&quot; are doing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

* denotes autonomy items from the Learning Climate Questionnaire
Verbal Immediacy Behaviors Instrument & Learning Climate Questionnaire (short version)

<table>
<thead>
<tr>
<th>Item</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. Listens to how I would like to do things*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. Provides feedback on my individual work through comments on papers, oral discussions, etc.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. Calls on students to answer questions even if they have not indicated that they want to talk</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. Conveys confidence in my ability to do well in the course*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. Asks how students feel about assignments, due dates or discussion topics</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. Invites students to telephone or meet with him/her outside of class if they have questions or want to discuss something</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. Tries to understand how I see things before suggesting a new way to do things*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35. Asks questions that solicit viewpoints or opinions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36. Praises students' work, actions, or comments</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>37. Will have discussions about things unrelated to class with individual students or with the class as a whole</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>38. Is addressed by his/her first name by the students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

* denotes autonomy items from the Learning Climate Questionnaire
Motivated Strategies for Learning Questionnaire (MSLQ)
Task Value (1-6) and Self-Efficacy Measures (7-14)

Please circle the number which best describes how you feel about the course you take immediately preceding this class.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I think I will be able to use what I learn in this course in other courses.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>It is important for me to learn the course material in this class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>I am very interested in the content area of this course.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>I think the course material in this class is useful for me to learn.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>I like the subject matter of this course.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>Understanding the subject matter of this course is very important to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>I believe I will receive an excellent grade in this class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>I am certain I can understand the most difficult material presented in the readings for this course.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>I am confident I can learn the basic concepts taught in this course.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>I am confident I can understand the most complex material presented by the instructor in this course.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>I am confident I can do an excellent job on the assignments and tests in this course.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>12</td>
<td>I expect to do well in this class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>13</td>
<td>I am certain I can master the skills being taught in this class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>14</td>
<td>Considering the difficulty of this course, the teacher and my skills, I think I will do well in this class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
Demographic Questions

Please circle the category which best answers the following.

My Class Rank:  Freshman  Sophomore  Junior  Senior

My Gender:  Male  Female

The course I take **immediately preceding this class**: (circle one)

The course is:  Elective  Required

The course is a:  Lecture  Lab  Recitation

The course meets:  early morning  middle of the day  late afternoon  evening

Class size:  0-29  30-59  60-89  90-119  120-149  150 or more

Course instructor is a:  Professor  Graduate Student

Instructor gender:  Male  Female

Instructor age:  20-29  30-39  40-49  50-59  60-69  70 or more

The course prefix of the class I take **immediately preceding this one** is:

______________________________ (example. Anim Sci, Sociol, Edu P&L etc.)

Please feel free to share any additional information about the instructor and course that you feel is important for us to know.
APPENDIX B

INSTITUTIONAL REVIEW BOARD DOCUMENTS
# Application for Exemption

**Title:** Application for Exemption from Review by the Institutional Review Board

**Institution:** The Ohio State University, Columbus OH 43210

**Protocol Number:** 2007E0810

## Principal Investigator

<table>
<thead>
<tr>
<th>Name: Dr. Jamie Cano</th>
<th>Phone: 614-292-9994</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department or College: Human and Community Resource Development</td>
<td></td>
</tr>
<tr>
<td>Campus Address (room, building, street address): 250 Ag Admin, 2120 Fyffe Rd</td>
<td></td>
</tr>
<tr>
<td>Signature:</td>
<td></td>
</tr>
<tr>
<td>Date: 11/26/07</td>
<td></td>
</tr>
</tbody>
</table>

## Co-Investigator

<table>
<thead>
<tr>
<th>Name: Jonathan Velez</th>
<th>Phone: 614-302-8900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus Address (room, building, street address) or Mailing Address:</td>
<td></td>
</tr>
<tr>
<td>250 Agricultural Administration Building</td>
<td></td>
</tr>
<tr>
<td>Signature:</td>
<td></td>
</tr>
<tr>
<td>Date: 11/26/07</td>
<td></td>
</tr>
</tbody>
</table>

## Protocol Title

The Relationship between Teacher Immediacy and Student Self-Efficacy, Self-Determination and Expectancy-Value Motivation

## Source of Funding

All funding will be provided by the PI and Co-investigator.

---

**For Office Use Only**

- **Approved.** Research has been determined to be exempt under these categories:  2.
  - Research may begin as of the date of determination listed below.
- **Disapproved.** The proposed research does not fall within the categories of exemption. Submit an application to the appropriate Institutional Review Board for review.

| Date of determination: 12/07/07 | Signature: Janet A. Schulte |

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Dear Participant,

You are being invited to voluntarily participate in a research study of student perceptions of instructor teaching. You have been selected as a participant because you are a currently enrolled student at The Ohio State University. By agreeing to participate, you will complete a survey questionnaire about your experience in a preceding class. You may choose not to answer some or all of the questions. Your responses are confidential and anonymous. Your name will not be used. All data will be reported in aggregate form.

There are no known risks from your participation and no direct benefit from your participation is expected. There is no cost to you except for your time. The 63 item questionnaire will take approximately 5-10 minutes to complete. All survey data will be securely stored in the department for no longer than five years, and then destroyed. Further information can be obtained from the principal investigator,

Dr. Jamie Cano
208 Agricultural Administration
2120 Fyffe Rd.
Columbus, OH 43210
614-292-6321

If you have questions concerning your rights as a research subject, you may call The Ohio State Human Subjects Protection Program office at (614)688-8457. By completing this survey questionnaire, you are giving permission for the investigator to use your information for research purposes.

Thank You for your participation.

Respectfully,

Dr. Jamie Cano
The Department of Human and Community Resource Development
APPENDIX C

PANEL OF EXPERTS
Panel of Experts

Dr. Jamie Cano
Dr. James J. Connors
Dr. Robert J. Birkenholz
Dr. Neil A. Knobloch
Kattlyn J. Wolf
Daniel D. Foster
Jon C. Simonsen
Ryan Foor
Charlie Bennett
Roy Ulrich
Rebekah Epps
Jeremy Falk