OPTIMIZING LEARNING THROUGH TEACHER-STUDENT RELATIONSHIPS: A TEST OF THE CAUSAL PROCESS STUDENT UNDERSTANDING MODEL

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ABSTRACT OF DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Communication and Information Studies at the University of Kentucky

By
Nicole Denise Dobransky
Lexington, Kentucky

Director: Dr. Derek Lane, Associate Professor of Communication
Lexington, Kentucky
2008

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In many ways, higher educational systems in the United States are the most extraordinary in the world. Students come from all over to study in our institutes of higher learning. As our search for an explanation of how to facilitate student learning continues, the goal of this dissertation was to examine the heavily under-researched area of teacher-student relationships as they relate to student understanding. Using the existing body of instructional communication research, the Student Understanding Model (SUM) is proposed and tested. Data collected from 302 undergraduate students was used to test the SUM. Results provide empirical support that relational messages account for approximately 26% of the variance in student understanding. Conclusions and implications from the current study were discussed.

KEYWORDS: Teacher-Student Relationships, Instructional Solidarity, Student Content-Related Question-Asking, Student Motivation, Student Understanding

Nicole Denise Dobransky

October 13, 2008
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October 13, 2008
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DISSENYATION

Nicole Denise Dobransky

The Graduate School
University of Kentucky
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This dissertation is dedicated to my father.
Your love and support have made me a better person.
ACKNOWLEDGMENTS

As I reflect on the dissertation process, and more generally, my experience in graduate school, I realize how blessed I am to have a wonderful support system. Throughout this journey, I have learned valuable lessons about research, academia, and life. First, and foremost, my most heartfelt thank you goes to Dr. Derek Lane – my Chair, mentor, and friend. Over the past several years you have spent countless days teaching me, helping me, and comforting me; and without you this dissertation would not be possible. In addition, I appreciate all the time, work, and never-ending support from Dr. Nancy Harrington, Dr. Phil Palmgreen, and Dr. Jeff Bieber who graciously served on my dissertation committee.

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Chapter One: Introduction

“University teachers are typically neglectful of their teaching duties, unapproachable, uncommunicative and unavailable to their students” (Lucas, 1996, p. 84). Although this statement seems damning, it is, indeed, the case that in a university setting much time is spent on duties other than teaching (i.e., research, service), which then may have a detrimental effect on student understanding and other salient learning outcomes. As we near 2009, educators continue to publish calls for higher educational standards and reform at the post-secondary level in our scholarly journals, yet continue to fall short in practice (Bok, 2006). There is empirical evidence that suggests that secondary and post-secondary instructional processes continue to fail far too many students (AACU, 2008; Boyer Commission, 1998; Friedrich, 1987; Sprague, 2002; Waldeck, Kearny, & Plax, 2001). Specifically, according to Lucas (1996), “most colleges and universities have neither been asked – nor have they succeeded in showing – whether student learning has actually happened” (p. 208). According to the 1998 Boyer Commission report on Educating Undergraduates in the Research University, many students continue to graduate with four-year degrees and still lack a coherent body of knowledge or any idea of how a given set of information relates to another information set. Moreover, too many college graduates are entering the job market without the knowledge of how to think logically, write cogently, and speak clearly. These issues are unfortunate and not something that scholars can continue to ignore or merely give lip service to.

Former Harvard President Dr. Derek Bok argues that although students make gains in some important respects, they are not excelling in key areas such as critical thinking, writing, quantitative skills, and moral reasoning (2006). Each of these skills functions as an indicator of cognitive knowledge acquisition but little is known about how formal education influences any of these skill sets. Further, Bok makes the credible argument that too many colleges and universities focus on sub-standard curriculum changes that result in no more than substituting degree requirements and electives, as opposed to developing coherent, assessment-driven curriculum. In other words, the focus is not on pedagogy, but rather on requirements and credit hours. In the last decade, reform efforts in higher education have been geared toward greater accountability of
pedagogical practices through calls for a “reinvention” of undergraduate education as it relates to student learning outcomes (Boyer Commission, 1998; Lucas, 1996; Welsh, Petrosko, & Taylor, 2006).

The foremost interest of instructional communication scholars in this reform is the exploration of how communication processes relate to student understanding. Over the past three decades instructional communication researchers have begun to build a foundation of research investigating teacher-student interactions and their relation to student attitudes and behaviors. It is through this work that instructional communication scholars have begun to bring some distinction to the term “instructional communication” (Waldeck et al., 2001); however, this program of research is still in need of work. In particular, the lack of systematic development in instructional communication research involves issues such as the confusion between instructional communication research and what is known as communication education. According to McCroskey (1992), instructional communication is the focus on communication in instruction, while communication education is instruction in communication. More specifically, communication education concerns the instructional strategies specifically designed to teach the content of the speech communication discipline, while instructional communication is the investigation of the role of communication in the teaching of all subjects at all levels (Sprague, 1992). The focus of this dissertation is on instructional communication, as evidenced by the causal process theory of student understanding put forth. According to Lewin (1951), there is nothing more practical than a good theory. This claim was further expanded by Shields and Cragan (1998) when they argued that there is nothing more important than a good communication theory. Therefore, the primary goal of the current research study is the development of a theoretical model will be applied to student understanding in all disciplines, not limited to communication courses.

Another issue inherent in the body of instructional communication research is the lack of clarity in how constructs are conceptualized and operationalized. Sprague (2002) argues that there is a need for a greater respect for how we name our key concepts. Specifically, she offers three linguistic lapses that “mar our current research reports” (p. 345). The first linguistic lapse is that our concept names lack face validity. Sprague
 contends that the most notable example of this is the label “verbal immediacy.” Verbal immediacy was initially operationalized by asking 47 students to brainstorm about specific behaviors characterizing the best teachers they have had over their years in school (Gorham, 1988). This resulted in a large variety of teacher behaviors (e.g., uses personal examples, uses humor in class, addresses students by name) with only one of those items (i.e., referring to the class as “our” class or what “we” are doing in class) related to the original conceptual framework posed for teacher verbal immediacy behaviors. Therefore, Sprague argues there is no justification for naming the composite scale “verbal immediacy.” Further, she argues that this measure, as well as other measures lacking face validity, should not be permitted to be entrenched in the literature of instructional communication when they do not actually measure what they purport to measure. Consistent with Sprague’s argument, in the current study, the construct of immediacy (both verbal and nonverbal) is operationalized in a manner which is more consistent with the original conceptualization of “psychological closeness” between two people (Mehrabian, 1969).

Another linguistic lapse Sprague (2002) identifies is that our conceptual language is at odds with usage throughout the broader scholarship of education. One specific construct used as an example is that of affective learning, a construct that has received much attention from communication scholars over the years. Sprague argues that the set of attitudes on the measure we use should be much more descriptive in nature. In fact, she argues that, “It must seem strange indeed to readers from other fields that our researchers can make claims that students have increased affective learning without knowing the affective goals of any of the courses involved” (p. 347). Although affective learning is not included in the model which serves as the focus of this dissertation, the same arguments may be made with respect to cognitive learning.

Clark (2002) suggested that learning should be the critical dependent variable for all serious instructional communication researchers. Prior to and following her call for more rigorous instructional research, many researchers have aggressively attempted to discover how communication facilitates learning. Various instructional variables have been investigated in relation to the different types of learning. Specifically, from a teacher’s perspective, variables such as credibility (Andersen, 1972, 1973; Beatty &
Zahn, 1990), clarity (Chesebro, 2003; Chesebro & McCroskey, 2000), immediacy (Andersen, 1979; Christophel, 1990; Gorham, 1988; Richmond, Gorham, & McCroskey, 1987), and affinity-seeking (Frymier, 1994a; Frymier & Thompson, 1992) have been related to student learning. Conversely, student variables such as motivation and competence (Christophel, 1990) have also been related to various student outcomes, including learning. Major concerns in past attempts to predict student learning surround the conceptualization of the learning construct and will be addressed in more detail in the following chapter. If the ultimate goal of instructional communication researchers to is to understand what classroom behaviors facilitate student learning, it seems conceptual clarity of the construct is warranted.

According to Hurt, Scott, and McCroskey (1978), “the difference between knowing and teaching is communication” (p. 23). Thus, the context of instructional communication is unique and important and should be studied in light of higher educational reform. It is notable that in the Boyer Commission’s (1998) articulation of the “ten ways to change undergraduate education” many of the strategies put forth are indirectly or directly linked to communication. For instance, one of the strategies included in this report is teaching students to link communication skills to coursework. Therefore, instructional communication research seems necessary to make possible changes in higher education.

In their review of instructional communication research, Waldeck et al. (2001) provided an analysis of research conducted between 1990 and 1999. They reported six content analysis themes: student communication, teacher communication, mass-media effects on children, pedagogical methods/technology use, classroom management, and teacher-student interaction. Interestingly, this content analysis revealed that the largest category of work focused on student communication variables while the smallest category focused on teacher-student interactions. As the authors argued, “although we know about ‘teacher’ behaviors and ‘student’ behaviors independent of one another, we know very little about how the teacher-student interactions influence learning” (p. 224). Unfortunately, this claim remains true today. Because inclusion of both teacher and student communication variables does not occur much in instructional research, thus limiting resulting knowledge claims, it is the goal to include both in the current study.
Even more disconcerting is that the instructional communication literature is riddled with variable analytic and atheoretical studies (Friedrich, 1987) that fail to provide a coherent causal process model that links teacher-student interactions to specific student learning outcomes. Although instructional researchers have developed theoretical models in an attempt to predict/explain student learning outcomes, to date none have been successful in predicting more than approximately 10% of the variance in cognitive learning (Witt, Wheeless, & Allen, 2003). Therefore, there is more to investigate before we can fully explain student learning.

The original Instructional Communication Model developed by McCroskey (reviewed in McCroskey, Richmond, & McCroskey, 2006) mirrors Shannon and Weaver’s (1949) well-known mathematical model of communication (see Ritchie, 1986), with familiar components such as source (teacher), receiver (student), noise, messages, encoding and decoding. The primary goal of the model was to illustrate the interpersonal nature of the communication that occurs between teachers and students. Unfortunately, however, this model falls short in several regards. First, the boundary conditions for model are unclear. Dubin (1978) argues that boundary conditions are necessary in theory-building so that a theoretical model only includes variables and conditions relevant to it. When too many variables are included in a theoretical model, parsimony is sacrificed as well as explanatory power.

Of even greater importance, the Instructional Communication Model is more conceptual than theoretical. In other words, there is little theory-based rationale behind the linkages contained in this model. Additionally, McCroskey’s original model contained several arbitrary variables and failed to identify specific hypotheses that could be tested to predict student learning outcomes. Finally, although teacher-student interactions should be of interest, it is notable that this model is teacher-centered. While the student is included in the model as the receiver of teacher messages, no student communication variables are included as predictors. Because the ultimate focus should be on student understanding, models of instructional communication can and should include both student behaviors and teacher behaviors.

In an attempt to address the problems inherent in the original model of instruction, McCroskey, Valencic, and Richmond (2004) published a model that allowed researchers
to test links among teacher temperament, student perceptions of teacher communication behaviors, student evaluations of teachers’ source credibility, task attractiveness, and instructional outcomes. Unfortunately, the model and its testing still fell short. Similar to the original model, this revised model relied too heavily on a teacher-centered approach because it included only teacher behaviors and no student behaviors. Also, the model was tested using canonical correlations only; thus, there was no attempt to test causal links between instructional variables and student learning outcomes. Fortunately, this initial attempt to build and test a general model of instructional communication had heuristic value. As a consequence of this research, other scholars have engaged in model development in an attempt to explain student learning. One such model is Frymier’s (1994b) Motivation Model of instructional communication.

In Frymier’s (1994b) Motivation Model, teacher nonverbal immediacy and teacher verbal immediacy predict student state motivation, which then explains learning. Although research testing this model has identified significant paths to learning, the model also is not without limitations. Particularly, the mediating variable used in this model is state motivation, “a widely studied construct in educational psychology over the years” (Frymier, 1994b, p. 135). Again, the only student variable included in Frymier’s model is student motivation, but no student communication variables are used to predict learning. In other words, the model is solely focused on teacher communication; thus, the student communication element is limited.

Indeed, a major criticism of instructional communication research is the lack of focus on communication and instructional messages within our work. Past research successfully identified specific relationships among instructional communication variables such as teacher credibility and student ratings of performance (Beatty & Zahn, 1990), teacher clarity and nonverbal immediacy (Chesebro, 2003), and teacher immediacy behaviors and cognitive learning (Richmond et al., 1987), but has failed to develop a predictive model of student understanding based on instructional communication. According to Berger (1991) the communication discipline must be concerned about the lack of strong theoretical underpinnings and the over-reliance on atheoretical communication research. If we are to engage in what Berger would consider “good” communication scholarship, we should be working toward an intimate connection
of theory and research. Lane (1996) suggested that there is a genuine lack of knowledge about the connections between educational reform, student understanding, and instructional communication. Further, student understanding, as an outcome, must be reconceptualized through communication theory and research.

The current study is centered on the development of a theoretical model that explains how teacher-student relationships can be used to predict student understanding as an outcome of the learning process. In addition to the need to expand instructional communication research and attempt to clarify the conceptualization and operationalization of student understanding (see Sprague, 2002), as well as advance instructional communication theory, the ultimate goal of this research study is to investigate and provide a stronger explanation of how teacher-student relationships positively impact student understanding.

From past research, we know that positive teacher-student communication is linked to increases in student motivation (Frymier, 1994b), more confirming classroom environments (Ellis, 2000), and overall student satisfaction (Dobransky & Frymier, 2004). Unfortunately, however, the link between teacher-student relationships and student understanding is largely absent in the body of instructional communication research. In other words, the literature does not provide evidence that clearly demonstrates how teacher-student relationships positively impact critical thinking, writing, speaking, and ultimately, student understanding. Hence, the relational dimension of teacher-student communication is the focus of the current study.

According to Watzlawick, Beavin, and Jackson (1967), there are two dimensions of communication: content and relational. Much of the literature investigating student outcomes in the classroom focuses solely on the content dimensions of teacher and student variables, such as content relevance and teacher clarity. The vital piece that seems to be missing is the role of the relational dimension of communication within the teacher-student interaction. Thus, it is important to investigate the student-teacher relationship unique to the context in which it develops.

One attempt was made nearly 30 years ago by Nussbaum and Scott (1980) who investigated teacher-student relationships as a mediating variable between teacher communicative behaviors and student learning. Results indicated that differing levels of
perceptions of teacher-student relationships positively correlated with affective, cognitive, and behavioral learning. Because this study included only bivariate correlational analysis, no causal links between the teacher-student relationship and learning could be supported. However, Nussbaum and Scott concluded that it seems such a causal link is likely and argued for more substantive research.

One of the earliest studies to answer Nussbaum and Scott’s (1980) call for work surrounding teacher-student relationships as one type of interpersonal relationship was conducted by Frymier and Houser (2000) when they suggested, echoing the work of Watzlawick and his colleagues in 1967, the teaching process consists of two dimensions: content and relational. They argued that for our teaching practices to be effective, we must be fully aware of, and incorporate, both dimensions in the process. Specifically, Frymier and Houser contend that teachers and students go through a relational development process that includes meeting one another, exchanging information, and developing and adjusting expectations, just as people do in other types of interpersonal relationships. Both teachers and students have goals they aim to achieve, and some of these goals are relational in nature. Therefore, a rationale for the study of the relational dimension of teacher-student communication is advanced.

In addition to the work of Frymier and Houser (2000), Rawlins (2000) argued that teaching may be viewed as a mode of friendship. Specifically, his approach involved “developing a caring relationship with students, searching for means and moments of speaking as equals, and encouraging shared responsibility for learning together” (p. 5). Rawlins contended that there are at minimum four underlying dialectical tensions that characterize teacher-student interactions. The tensions include the dialectic of freedom to be independent and freedom to be dependent (i.e., the degree of freedom teachers and students may exercise in the learning process), judgment and acceptance (i.e., how teachers balance attempts to accept students as people and aspiring scholars while evaluating their work), affection and instrumentality (i.e., how much teachers may be permitted to care for their students), and expressiveness and protectiveness (i.e., how much teachers should be open in order to facilitate student pursuits of knowledge and discreet in order to help students preserve their integrity). Communicating as
“educational friends,” however, may be a risky situation, and there is no empirical evidence that teaching as mode of friendship positively impacts student understanding.

Unlike the work of both Frymier and Houser (2000) and Rawlins (2000), in which they framed teacher-student relationships as having characteristics similar to friendships, Dobransky and Frymier (2004) investigated specific relational characteristics used in the development of appropriate interpersonal teacher-student relationships, including shared control, trust, and intimacy. Again, the relational variables were shown to be related to both affective and cognitive learning; however, results were based mostly on correlation analyses. Although this first attempt to identify the context in which teacher-student relationships develop was fruitful, as it provided further evidence that the relational dimension of teacher-student communication is positively related to increases in student learning outcomes, the current research will focus on in-class communication between students and teachers since the majority of interaction with students occurs in the classroom environment. It is notable that both in-class and out-of-class teacher-student interactions are important; because classroom interaction occurs more frequently, it will be the focus of the current study.

Unfortunately, the focus on student or relational behaviors is largely absent in the body of instructional communication literature. In 2001, Teven continued research on teacher behaviors and argued that specific teacher variables (such as caring, nonverbal immediacy, socio-communicative style, and verbal aggression) are directly related to specific student behavior patterns. Teven wrote, “in order to maximize learning, it is essential for teachers to develop a good relationship with their students, because the rapport established between teachers and students, in part, determines the interest and performance level of students” (p. 159). Although this observation is meaningful, there are no studies which predict student understanding as a function of the teacher-student relationship.

Assuming the well-accepted axioms of Watzlawick and his colleagues are correct, in order to comprehensively study the communication that occurs between teachers and students, we cannot simply ignore the relational dimension of communication. According to Teven (2001) it is important to develop an appropriate interpersonal relationship with our students. Empirical evidence that demonstrates how the relational
dimension of teacher-student interactions positively impacts student learning outcomes, however, does not exist. Therefore, the central focus of this dissertation is to examine the link between teacher-student relationships and student understanding. If past assertions are supported, and teacher-student relationships are found to positively influence student learning outcomes, a new theory of instructional communication would be warranted.

There are at least three primary justifications for the current research study. First, within the body of instructional communication research there is much inconsistency in how student understanding is defined, both conceptually and operationally. Second, there is a lack of instructional communication theory from which to predict and explain student understanding. Instructional communication research must be expanded so that we may cease reliance on theories from other disciplines, and rely more heavily on theories of communication relevant to the teacher-student context. Finally, there is little empirical evidence that the teacher-student relationship positively impacts student understanding. Therefore, a better understanding of the importance of teacher-student relationships is needed. Taken together, it is the goal of this dissertation to attempt to reconcile problems that continue to riddle instructional communication research and provide a valid, working theory of student understanding.

A comprehensive literature review of relevant instructional communication research may be used to identify salient relationships that can be used to develop a causal process model that clearly links relational instructional communication variables to student learning outcomes. By acknowledging the interpersonal nature of the teacher-student relationship, we can determine the behaviors important to the development of student perceptions of such a relationship. Specifically, the components of the instructional model of communication put forth in the current study frame the teacher-student relationship in terms of instructional solidarity resulting from the specific teacher behaviors teacher caring, immediacy, and shared control, as well as the student behaviors such of immediacy and affinity-seeking behaviors. Given previous research (see Nussbaum & Scott, 1980), these behaviors should positively impact student perceptions of an interpersonal relationship, which should, in turn, positively contribute to student learning outcomes.
In the following chapter, an overview of the literature surrounding teacher-student relationships including a review of teacher and student behaviors hypothesized to be predictive of teacher-student relationship development in the current study is provided. Next, relevant literature on potential mediating variables linking teacher-student relationships to learning outcomes is reviewed. Finally, the construct of student understanding is addressed. The literature review is organized in this particular manner so that the arguments for how the components of the proposed causal process model are related are clearly put forth. Because the model is causal in nature, each piece is interdependent and builds on each previous piece.
Chapter Two: Review of Literature

According to the Boyer Commission (1998), undergraduate students must be able to demonstrate strong communication skills, and it is then that our educational system will produce graduates who are prepared to be successful professionally. It does not matter what the discipline is, or what traditional teaching methods have taught us, if student understanding is to be enhanced it is our responsibility as educators to do what we can to facilitate it. Instructional communication scholars have found that the relationship that occurs between teachers and students can, and does, influence student understanding, directly and indirectly. According to past research, positive teacher-student relationships facilitate affective learning (addressing, changing, and/or reinforcing students’ attitudes as they relate to knowledge and skills acquired), which, in turn, influences cognitive learning (the acquisition of and ability to understand and use knowledge) (Carrell & Menzel, 2001; Chesebro & McCroskey, 2000; Witt & Wheeless, 2001). The link between the teacher-student relationship and learning outcomes, however, remains small (Witt et al., 2003). Research indicates that lower levels of learning, such as recall and comprehension, can and do occur when students read the textbook and/or listen to lectures (Titsworth, 2001), but higher levels of learning such as analysis, synthesis, and evaluation may require more interaction between student and teacher (Frymier & Houser, 1999). Although one may argue that interaction is, indeed, taking place when a student engages in reading or listening to a lecture, it may be the nature of the interaction (i.e., impersonal versus interpersonal) between teacher and student that facilitates the understanding we hope our students will achieve.

In the following review of literature it is prudent to first review past research surrounding teacher-student relationships and learning outcomes in an attempt to identify gaps/problems in our understanding of the link between the two constructs. After describing the state of the related instructional communication research, which includes the discussion of the underlying theoretical framework used to guide the current study, the new Student Understanding Model (SUM) will be proposed to address the shortcomings in instructional communication research. Because the proposed causal process model begins with the relational dimension of communication between teachers.
and student, it is necessary to review relevant past literature on student-teacher relationships.

Teacher-Student Relationships

Interpersonal communication has been defined as “the exchange of symbols used to achieve interpersonal goals” (Bettinghaus & Cody, 1994). The goals between two communicators may vary, but many times refer back to the interpersonal needs of affection, inclusion, and control (Schutz, 1958). Schutz argued that we develop interpersonal relationships to satisfy such needs. To elaborate on the nature of interpersonal relationships, five characteristics have been identified to qualitatively define interpersonal communication (Miller & Steinberg, 1975). Arguably, four out of the five characteristics provided in this framework may also be applied to teacher-student relationships. The first is uniqueness, which is referred to above, in which the two parties within a relationship communicate based on personal factors, rather than sociological factors. The second characteristic is irreplaceability, indicating the impossibility of any relationship to replace any other relationship. This characteristic is the one that we will drop from this study since often teacher-student relationships are not irreplaceable, because (in most cases) students have the option to take the same class from a different teacher and develop a relationship with him/her.

Next, there is usually some degree of interdependence within interpersonal relationships. This is evident within teacher-student relationships since the teacher is dependent on the student’s communication in order to aid in the facilitation of learning. The student is also dependent on the teacher for fulfillment of course goals, academic pursuits, and perhaps even help with personal matters. Disclosure has also been identified as a feature of interpersonal relationships, that is, personal self-disclosure that ultimately binds together the two relational partners. Finally, interpersonal relationships are said to produce intrinsic rewards for both persons within the relationship.

Other strategies have also been used to conceptualize interpersonal relationships, such as Wilmot’s (1995) two distinct levels of relationships. The first level is formation in which there is a mutual recognition by both persons that a relationship is forming. Within the teacher-student relational context, this may occur on the first day of class when the student and teacher first meet. In level two, there exists a past, present, and
future that arises over several interactions that accumulate over time. In this stage, communication exchanged includes both formal and informal information-sharing. In terms of teacher-student relationships, formal information shared may include process/task and/or course content within the interaction context. Informal information includes topics such as current events, other classes, or other information not pertaining to the specific course the student is taking with that teacher.

It should be noted that relationships do not move from one stage or level to another without interaction. According to Dindia and Timmerman (2003), at least one person must influence a minimum of three underlying dimensions of relationships that change as the relationship develops: frequency and duration of interaction, liking or attraction, and intimacy. Though an investigation of the stages of the development of teacher-student relationships is beyond the scope of this study, this research is included to illustrate the importance of the interaction between teacher and student that may take place in order for perceptions of a relationship to develop.

Any type of relationship is multifaceted and dynamic. This, of course, includes the relationship that develops between teachers and students. It is a well-known truth in communication that relationships do not develop in a vacuum (e.g., in the absence of communication), thus the messages sent between teacher and student are critical to the development of a student-teacher relationship. Furthermore, both the content and relational dimensions of communication (Watzlawick et al., 1967) must be considered when investigating teacher-student interaction. With the exception of a student caring solely about what grade s/he receives in a class, with no concern for how the teacher behaves in the classroom, the relational dimension becomes especially important.

In 1980, Daly and Korinek called for clarity regarding the teacher-student relationship and its association with student understanding. Over two decades later, Teven (2001) argues that, “in order to maximize learning, it is essential for teachers to develop a good relationship with their students, because the rapport established between teachers and students, in part, determines the interest and performance level of students” (p. 159). Unfortunately, instructional communication research is lacking in empirical evidence regarding what behaviors (both teacher and student) actually create perceptions of an interpersonal relationship. For purposes of the current study, the unique
interpersonal relationship that occurs between teachers and students will be referred to as instructional solidarity.

**Instructional Solidarity**

Instructional solidarity may be defined as an interpersonal relationship between teacher and student. Past research has begun to examine the teacher-student relationship in this way (Frymier & Houser, 2000). Moreover, research has identified a positive relationship between perceptions of an appropriate interpersonal relationship (on the part of the student) and learning indicators (Dobransky & Frymier, 2004). Specifically, variables such as trust, nonverbal immediacy, and shared control (traditionally characteristic of other types of interpersonal relationships) correlate with student learning.

In many ways, attributes common to teacher-student relationships are symmetrical to those inherent in other types of interpersonal relationships (see Frymier & Houser, 2000; Rawlins, 2000). One such concept is interpersonal solidarity, which has been conceptually defined as a feeling of closeness between people that develops as a consequence of shared feelings, similarities, and intimate behaviors (Wheeless, 1976). Adapting this construct within an instructional context, instructional solidarity may be defined as a feeling of closeness between teacher and student developed as a result of shared feelings, similarities and intimate behaviors appropriate for such a relationship. Therefore, instructional solidarity is one type of interpersonal solidarity, just as a friendship is one type of a relationship.

Researchers have argued that teacher-student relationships influence learning outcomes (Richmond et al., 1987) but rely on mainly on correlations between teacher behaviors (e.g., immediacy) and student attitudes (e.g., liking, learning loss, satisfaction) to support their argument. Over the last 30 years, minimal research has been focused on teacher-student relationships. In 1987, Stewart and Wheeless examined interpersonal solidarity as student-teacher solidarity, arguing that the relationship between teachers and students is unique from other types of interpersonal dyads. In this seminal research, no explicit links were found between teacher-student relationships and learning outcomes and little work was conducted until 2000 when Frymier and Houser examined the relationship between teachers and students from a friendship framework. The same year,
Rawlins framed teacher-student relationships as “educational friendships” and suggested that students and teachers face on-going challenges of dialectical tensions which make the relationship fragile to manage. This work continued with Teven’s (2001) work on teacher caring; again it was argued the teacher-student relationship is important, yet little empirical evidence was provided. In 2004 Dobransky and Frymier investigated the link between the teacher-student relationship and learning, yet reported the most significant correlation with affective learning and failed to account for a significant proportion of variance in cognitive learning. Finally, as recent as 2007, Weiss and Houser examined student-teacher classroom communication and found student levels of attraction for the instructor positively relate to motivation to develop a relationship with him/her. Taken together, past research provides evidence that teacher-student relationships are related to student attitudes, but the degree to which they predict student understanding remains uncertain.

Thus, it is the goal of this dissertation to investigate how perceptions of instructional solidarity positively impact student understanding. Only after we have investigated what teacher and student behaviors predict student perceptions of a relationship will it be possible to examine the link between student perceptions of instructional solidarity and student understanding.

Teacher Immediacy

Originally advanced by Mehrabian in 1969, immediacy may be conceptually defined as a perception of physical or psychological closeness between persons (Andersen, 1979; Richmond et al., 1987). Within an instructional context, immediacy may be defined as the degree of perceived physical or psychological closeness between students and teachers (Richmond, Lane, & McCroskey, 2006). The use of teacher immediacy behaviors enhances closeness and creates positive attitudes in others by decreasing the physical and/or psychological distance between communicators (Mehrabian, 1969, 1971). Teacher immediacy research has been particularly salient to instructional and education scholars interested in understanding the variables that impact classroom learning in higher education (Chesebro & McCroskey, 1998; Christophel & Gorham, 1995; Frymier, 1994b; McCroskey, Richmond, Sallinen, Fayer, & Barraclough, 1996; Robinson & Richmond, 1995; Thomas, Richmond, & McCroskey, 1994; Walker &
Hackman, 1991). What remains absent from the literature on teacher immediacy, however, is an understanding of how immediacy impacts student perceptions of instructional solidarity. Moreover, consistent with Sprague’s (2002) call for action, clarification of the immediacy construct (both verbal and nonverbal) is necessary.

The construct of immediacy has been theoretically grounded in approach-avoidance theory which suggests people tend to approach (or are drawn to) persons they like and/or evaluate highly, while they avoid (or move away from) those that they dislike and/or evaluate negatively (Mehrabian, 1981). Further, sets of verbal and nonverbal communication behaviors have been identified that contribute to reducing the perceived physical and/or psychological distance between two people (Mehrabian, 1969, 1971).

Immediacy is communicated through a myriad of both nonverbal (Andersen, 1979) and verbal teacher behaviors (Gorham, 1988). Researchers have identified nonverbal immediacy behaviors such as variety in vocal pitch, loudness, tempo, smiling, leaning toward a person, face-to-face body position, decreasing physical barriers between themselves and their students, spending time with students, and informal, but appropriate attire (Andersen & Andersen, 1982). Recent research has indicated that student perceptions of teacher nonverbal immediacy were positively correlated with students’ willingness to engage in learning (Mottet, Parker-Raley, Cunningham, & Beebe, 2005). Moreover, teacher nonverbal immediacy has been shown to correlate with behavioral, affective and cognitive learning (Witt et al., 2003). To a lesser extant, teacher verbal immediacy has been shown to relate to student reports of cognitive learning ($r = .06$).

Within the instructional context, research has indicated a wide variety of behaviors related to verbal and nonverbal immediacy, including (a) nonverbal expressiveness (i.e., Andersen, 1979; Christensen & Menzel, 1998; Comstock, Rowell, & Bowers, 1995; Rodriguez, Plax, & Kearney, 1996), (b) teacher humor in the classroom (i.e., Gorham & Christophel, 1990; Javidi, Downs, & Nussbaum, 1988; Wanzer & Frymier, 1999), (c) student motivation, de-motivation, and expectancies (Christophel & Gorham, 1995; Frymier, 1994a), (d) student ratings of instruction (Moore, Masterson, Christophel, & Shea, 1996), (e) teacher clarity (Chesebro & McCroskey, 2001), (f) student state motivation (Chesebro & McCroskey, 2001), (g) teacher credibility (Thweatt & McCroskey, 1998), and (h) student willingness to talk, both in (Menzel & Carrell,
and out (Jaasma & Koper, 1999) of the classroom. While all of these are important, perhaps the most significant relationship instructional communication scholars have found is that between teacher immediacy behaviors and learning (Nussbaum, 1992). According to this research, when teachers are more immediate, students report higher levels of affect for the course content and the teacher, indicating one type of learning. More recently, Allen, Witt, and Wheeless (2006) conducted research in which results suggested that high levels of teacher immediacy function as a means of increasing the motivation of a student to learn, and that such motivation may increase the cognitive mastery of material. Once students are motivated to engage cognitively or behaviorally in their learning process, their understanding should be enhanced.

As demonstrated, extant research on teacher immediacy has provided evidence that such closeness between teachers and students enhances both learning outcomes and student motivation (Burroughs, 2007; Christophel, 1990; Frymier, 1994b; Kearney, Plax, & Wendt-Wasco, 1985; Richmond & McCroskey, 2000). This research, however, is not without limitations. Recent research that has attempted to manipulate immediacy behaviors to investigate the effect on cognitive learning has found small or no effects (see Messman & Jones-Corley, 2001; Titworth, 2001). Around the same time, as part of a larger meta-analysis, Witt and Wheeless (2001) reported that immediacy accounts for only 3% of the variance in student learning. Therefore, even though research supports the argument that immediacy impacts learning, the extent of that impact is questionable and remains a topic of heated debate. As indicated by the substantial amount of research on teacher immediacy behaviors it is assumed within instructional communication that immediacy is an integral construct in relation to learning. Such an assumption, however, has not been empirically supported.

Within the present research study, teacher immediacy will be investigated as one predictor of student perceptions of instructional solidarity. It is a purpose of the current research study to examine the impact of student perceptions of instructional solidarity on student understanding, thus it seems prudent to first investigate which behaviors lead to the development of such perceptions. Though the research on teacher immediacy may be highlighted as one of the most important teacher behaviors influencing communication between teachers and students, it is not the only teacher behavior that can potentially
influence student outcomes. Another prevalent variable studied in instructional communication is teacher caring.

**Teacher Caring**

According to Irme (1982), “Caring means that the other person matters, that the other person makes a difference not only to the person directly affected, but also to others who care” (p. 14). An obvious construct important to other types of interpersonal relationships (e.g., friendships, romantic relationships), perceived caring is also crucial within teacher-student relationships. It is likely that teacher caring may predict a significant portion of variance in student perceptions of instructional solidarity. As Thayer-Bacon and Bacon (1996) write, a caring teacher is someone who “acknowledges, rather than ignores, what goes on outside of the classroom as being relevant for student learning” (p. 260). Additionally, teacher behaviors within the classroom are also significant to the development of student perceptions of teacher caring.

According to Teven (2001), “A vital requisite to effective teaching is establishing a climate of warmth, understanding, and caring within the classroom” (p. 159). In fact, perceptions of teacher caring have been correlated with student reports of affective and cognitive learning (Teven & McCroskey, 1997). In 1992, McCroskey conducted research that indicated the three factors involved in teacher caring were empathy, understanding, and comforting strategies. Similarly, these same factors are characteristics of other types of interpersonal relationships (Samter & Burleson, 1984). More recently, Teven (2007) found student perceptions of teacher caring to be related to reports of teacher credibility and trustworthiness, as well as increased affect toward both the instructor and the course. Because caring is such an important construct in the development of other types of interpersonal relationships, it seems likely that teacher caring behaviors will similarly lead to student perceptions of instructional solidarity.

Unfortunately, many of the claims that have been made regarding the importance of teacher caring in the development of teacher-student relationships have not been empirically tested. Similar to teacher immediacy, the extent of the impact of teacher caring in student perceptions of instructional solidarity remains a question. Moreover, how teacher caring influences student understanding is unclear in the existing body of literature. Hence, this dissertation seeks to clarify existing literature surrounding teacher
caring and its relationship to both student perceptions of instructional solidarity, as well as student understanding. Given the complexity of the classroom setting, it seems likely that factors beyond teacher immediacy and teacher caring will influence student perceptions of instructional solidarity. Thus, we turn to other classroom behaviors that may influence student perceptions of instructional solidarity.

**Shared Control**

Control has been demonstrated to play a central role in many interpersonal relationships (Dunbar, 2004). The control dimension, as described by Millar and Rogers (1976), is enacted via the communication that occurs between relational partners. Similarly, the control dimension seems to constitute a large portion of the communication that occurs between a student and teacher. Traditionally, it is assumed that teachers hold most of the power and control in the classroom and typically have greater status than students. However, students also have power in the classroom. This may be in the form of students resisting teachers (Kearney, Plax, Smith, & Sorensen, 1988) or in teachers empowering students (Frymier, Shulman, & Houser, 1996). When teachers provide students with choices or allow them to have input into the content covered or other aspects of the class, the teacher is sharing control. Though the relationship was small, research has shown that shared control is positively related to learning outcomes (Dobransky & Frymier, 2004).

Much research has been conducted looking at the communication of power that occurs between students and teachers (Kearney, Plax, Richmond, & McCroskey, 1985; McCroskey & Richmond, 1983; Plax, Kearney, McCroskey, & Richmond, 1986; Richmond & McCroskey, 1984). According to Richmond and Roach (1992), three general conclusions may be drawn concerning power in relation to communication. First, there is a certain amount of power vested in most relationships, with pressures to conform to the expected role appropriate in that context. As defined by Millar and Rogers (1976), one-up one-down communication patterns may be used to articulate such control. For example, in a teacher-student relationship, there is a social pressure for the student to respect and abide by the word of the teacher: “…the role of a teacher, almost by definition, involves social influence” (Richmond & Roach, 1992, p.58).
Secondly, Richmond and Roach (1992) assert power is something that must be granted to another person. Barnard (1938) argued that one person grants power to another person by accepting a message or order from the other person. A teacher only has control over the students if the students accept the messages and orders from the teacher. If this is the case, then, the control pattern (see Millar & Rogers, 1976) may be considered as closer to the rigid end of the continuum. Such acceptance is the form by which students grant teachers power. The same holds true, however, when teachers allow students to make certain choices or participate in class. Teachers then are granting power to their students. This concept may then best be described as shared control, in which both the teacher and the student share the power/control.

Finally, power and communication are related in such a way that it is almost inevitable that at some point one person in the relationship will try to exert power over the other person via means of communication. Power and communication are inextricably related, and, thus, one person will at one time send a message (either verbal or nonverbal) in order to exert pressure on another to conform (see Schrodt, Witt, & Turman, 2007). As previously cited, the control dimension is primarily concerned with who has such a right to exert the pressure that will direct and define the actions in a relationship (Millar & Rogers, 1976). Thus, in relation to teacher-student relationships, such messages attempting to exert such pressure may include reprimanding a student, giving assignments, and giving grades. The student, however, may also be the person exerting power by way of pressuring teachers to do such things as change assignments, push back due dates for assignments, and give better grades.

McCroskey and Richmond (1983) conducted a series of research studies regarding power in the classroom. Based on French and Raven’s (1959) five power bases, they found that students and teachers do share similar perceptions of teachers’ use of power in the classroom. The one area that these perceptions are dissimilar, however, is that students perceive teachers to use more coercive power (e.g., power by use of punishment) than they perceive themselves using.

Students and teachers may also perceive such influence differently. By means of numerous studies concerning teacher use of Behavior Alteration Techniques (BATs) (Kearney et al., 1985; Plax et al., 1986) we have learned that there is a significant
correlation between students’ perception of behavior alteration technique use and affective learning. Specifically, research has indicated a positive correlation between teacher use of prosocial strategies and student affect toward the teacher, thus leading to affective learning (McCroskey, Richmond, Plax, & Kearney, 1985). From these generalizations, it may be posited that the type of communication a teacher uses to exert power in the classroom will impact the teacher-student relationship. This correlation, however, has not been empirically tested. As with other instructional communication constructs represented in the literature, claims are often made regarding control in the classroom void of any evidence for support. One of the goals of the current research study is to examine the link between shared control and instructional solidarity.

Teacher behaviors on their own, however, cannot and do not create the communication events that occur between teachers and students. This is one of the major criticisms of past instructional research (Sprague, 2002). In order for the relationship between teacher and student to develop, student behaviors also play a pivotal role in the process. Thus, we turn to a review of past literature surrounding student influential messages.

**Student Immediacy**

While much instructional communication literature has focused on teacher immediacy behaviors, relatively little research has been conducted to investigate student immediacy behaviors. As Nussbaum (1992) stated, however, instructional communication research needs to address the effects of student communication behaviors in the classroom. When we focus solely on either teacher or student behaviors, we fail to examine the interaction that is, in fact, what our discipline is founded upon. Within the classroom context, “teachers are viewed as the source and students as the receivers, and no attempt is made to account for mutual influence” (Nussbaum, 1992, p. 172).

According to McCroskey (1992), to facilitate student understanding, teachers should continuously be making judgments regarding student messages. Specifically, while in the classroom teachers often rely on student feedback to gauge whether or not students understand course content. As defined by Bettinghaus (1968) feedback includes “any information that the source gains from receivers about the probable reception of the message. Smiles, frowns, attention, inattention, questions, and comments are all
examples of feedback” (p. 207). Teachers must rely upon student feedback within the classroom environment in order to be effective.

One of the earliest attempts to examine the impact of student feedback on teacher perceptions was advanced by Rosoff in 1978. Rosoff claimed that students who provided positive feedback would be perceived more positively by their teachers in terms of credibility, attraction, solidarity, homophily, and potential for educational success. Results of this research indicate that immediacy plays a significant role in teacher perceptions of students. Particularly, as teachers perceived their students as more immediate, they also perceived their students to be more credible. More recently, it was shown that teachers who perceive their students as more nonverbally immediate (in the classroom environment) expressed more positive affect for students than did teachers who perceived their students as engaging in less nonverbally immediate behaviors (Baringer & McCroskey, 2000).

Therefore, it is clear that immediacy behaviors, initiated by both teacher and students, positively influence affect. To reiterate, however, neither student behaviors, nor teacher behaviors, independently, can lead to student perceptions of a teacher-student relationship. In addition, when students desire such a relationship with their teacher, they may engage in other behaviors to increase teacher affect. Thus, it is important to review the literature surrounding affinity-seeking behaviors in the classroom.

**Affinity-Seeking Behaviors**

Affinity may be defined as, “a positive attitude toward another person” (McCroskey & Wheeless, 1976, p. 231). Affinity seeking behaviors, then, include behaviors such as increasing positive self-disclosure, stressing areas of positive similarity, providing positive reinforcement, expressing cooperation, complying with others’ wishes, and fulfilling others’ needs. Bell and Daly (1984) developed a typology of 25 affinity-seeking behaviors that individuals may use to induce positive feelings. In their research, affinity-seeking strategies were shown to have significant correlations with liking, loving, satisfaction, and social effectiveness.

Within the instructional context, students’ use of affinity-seeking behaviors should positively correlate with positive feelings for a teacher. Further, it is possible that if teacher affinity-seeking behaviors are successful, this will lead to greater frequency and
quality of both formal and informal interaction between teacher and student. In turn, affinity-seeking behaviors will not only positively affect interaction, but also student perceptions of a teacher-student relationship.

Previous research has investigated instructor use of affinity-seeking strategies and found the construct to be positively related to several outcomes such as student motivation (Frymier, 1992, 1994a) and perceived teacher credibility (Frymier & Thompson, 1992). This research suggests that affinity-seeking strategies are often very effective in interactions when the two parties are of equal status, or when used by the person with subordinate status. Within the context of the classroom, the teacher is usually the person with the higher status, while the subordinate status belongs to the student. Unfortunately, few instructional studies have examined the affinity-seeking strategies of students.

Perhaps one of the first scholars to focus on subordinate affinity-seeking was Wanzer in 1995. Specifically, Wanzer examined students’ affinity-seeking strategies with teachers, both frequency and effectiveness of strategies used. In this initial research, fourteen categories of student affinity-seeking strategies were identified. Many of these categories were not unlike Bell and Daly’s (1984) typology of affinity-seeking. Similarities included items such as “complete course requirements” and “flirting.” Moreover, students reported that the most effective way to gain affect from their instructors was to flirt with or compliment the teacher.

Follow up research on student-affinity seeking strategies validated the use of the initial 14 affinity-seeking strategies identified and helped to provide more insight into students’ perceptions of effective and ineffective strategies that students may use to gain teacher liking (Dolin & Wanzer, 1994). As indicated by McCroskey and Richmond (1983), often there are discrepancies between students’ interpretations of teachers’ behaviors and teachers’ interpretations of their own behaviors. For instance, when students use affinity-seeking strategies to assume control, flirt, and/or assume equality teachers’ do not perceive such behaviors as positive, but rather they negatively impact perceptions of a teacher-student relationship. Wanzer (1998) conducted a study which examined the cross-section of both student and teacher perceptions of student-generated affinity-seeking behaviors. Results indicated that teachers and students agreed that
certain strategies are used most frequently including “conversational rule-keeping,” “elicit other’s disclosure,” “self-inclusion,” and “requirements.”

This research, however, may be viewed only as a first attempt to understand student affinity-seeking behaviors. The variable analytic nature of previous studies has failed to predict substantial variance in student learning outcomes. Therefore, the applicability of the results is limited. Perhaps specific teacher and student behaviors will impact both the quality and quantity of interaction between teachers and students, which will, in turn, lead to student perceptions of instructional solidarity. The perception of instructional solidarity should motivate students to enact behaviors that will ultimately impact student engagement behaviors such as student motivation and content-related question-asking. Thus, a brief review of literature surrounding these constructs is warranted.

**Student Motivation**

According to Christophel (1990) and Richmond (1990), students will learn if they want to learn. In other words, if students are motivated to learn, they will put forth more time and energy into the learning process. Past research has indicated that there are certain behaviors teachers can enact to increase student motivation, such as use of relevance strategies (Frymier & Shulman, 1996), immediacy (Richmond, 1990), and affinity-seeking strategies (Frymier, 1994a). Additionally, we know from the interpersonal literature that relationships motivate us to learn and achieve our potential.

Motivation has been defined as both state and trait (Brophy, 1986, 1987; Keller, 1983). State motivation has been defined as the motivation a student experiences toward a particular class, task, or content area at a particular time. State motivation is highly influenced by the situation and can vary from time to time. Trait motivation is generally more enduring and refers to a student's innate motivation toward studying or learning. This distinction is important because it suggests that teachers can have a positive impact on students' state classroom motivation. Therefore, the focus in the current study is on state motivation, rather than both state and trait motivation.

Keller (1983, 1987) developed the ARCS model of motivation that identifies four conditions necessary for influencing students' motivation to study. These four conditions include interest (more recently referred to as attention), relevance, expectancy (more
recently referred to as confidence), and satisfaction. Regularly capturing students' attention has been considered the initial step in motivating students to do a particular task (Brophy, 1986, 1987; Corno & Mandinach, 1983; Wlodkowski, 1978). In other words, if students pay attention in class, they are more likely to be involved and put forth effort to learn. The second condition is relevance. According to Keller (1983) making course content relevant to students satisfies certain needs such as the need for affiliation and/or achievement. Third, positive expectancies, or confidence, may be developed by communicating to students what is expected of them and providing reassurances that they can succeed at the task. Finally, the last condition necessary for students' motivation is satisfaction. When students feel satisfied with the outcomes of their effort they will continue to be motivated.

Like other interpersonal relationships, motivation is often the result of the affect one has for a relational partner—including the desire to avoid disappointing them. Recent research indicates that when students perceive their teachers to be supportive, motivation to learn increases (Jones, 2008). Therefore, once perceptions of instructional solidarity are developed, it is likely reported levels of state motivation will increase. As state motivation increases, so too should levels of student understanding. In addition to student motivation, another possible mediating variable in the relationship between instructional solidarity and student understanding is student question-asking.

**Student Question-Asking**

Cooper (1985) describes classroom communication as a transactional process that is "complex, symbolic, and has both a content and a relational component" (p. 3). One way that students engage in this transactional process within the classroom setting is via question-asking. Cunconan (2002) suggests that question-asking is the most fundamental process through which students participate in class. The willingness of students to engage in class is often an indicator of their strategy to reduce uncertainty, and often this materializes in the form of question-asking. Furthermore, research suggests that among undergraduate students, question-asking is the most overt form of uncertainty reduction strategy used (Myers, 1998; Myers & Knox, 2001).

Interaction involvement has been defined as “the extent to which an individual partakes in a social environment” (Cegala, 1981, p. 112). Individuals who are decidedly
involved in an interaction often take the time to consider the circumstances as they arise in a communication interaction and respond accordingly, whereas individuals who are less involved in conversation often remove themselves psychologically and communicatively from the conversation (Cegala, 1984; Villaume & Cegala, 1988). In the college classroom environment, student question-asking is a strong indicator of involvement. Further, students’ interaction involvement has been shown to relate positively with reports of state motivation, satisfaction, and learning (Frymier, 2005; Myers & Bryant, 2002).

Unfortunately, student question-asking does not occur as frequently as it could (Aitken & Neer, 1993). Most teachers pause from time to time during their lecture to determine if students have questions. After a brief moment of silence, if no student speaks up, often the teacher continues. Therefore, students may not have enough time or encouragement to ask questions as often as may be ideal, thus resulting in a lack of student question-asking.

Investigations of student questioning began almost a century ago when Stevens (1912) argued that questioning was the most common discourse in classrooms of all grade levels. Within the communication discipline, student question-asking has been studied within the classroom context (Dillon, 1988). For instance, in 1989, Darling explored the verbal strategies utilized by students to signal comprehension problems. Subsequently, Kendrick and Darling (1990) continued to investigate problems with student comprehension of material focusing specifically on strategies students use to tackle comprehension problems. Through question-asking, students can request help, indicate a lack of comprehension, and request additional information as needed (Darling; Kendrick & Darling).

In 1991, Pearson and West explored student questions in the college classroom. Results indicated that students often ask questions regarding clarification and class procedures an average of three times per hour of instruction. A few years later, Pearson and West (1994) continued this line of research as they investigated the relationship between student question-asking and teacher comments in the college classroom. This analysis produced six categories of student questions: classroom procedures, general inquiry-teacher, content, clarification, confirmation, and unknown/other. In addition,
they found that there are multiple categories of teacher antecedent comments that often encourage student question-asking, including, but not limited to, “Do you have any questions or comments on the material?” It appears from past research (see Karp & Yoels, 1976) that student question-asking does increase student involvement in the learning process, and thus development of cognitive processes.

More recently, Simonds (1997b) examined student classroom challenge behavior, which she conceptually defined as a mediational strategy that students use to share ownership in the classroom culture. According to Simonds, “…an alternative perspective from which to view challenges in the college at issues of teacher influence, this study explores the nature of teacher/student interactions from a relational perspective where classroom expectations are negotiated, transactional, and mutually influenced” (p. 483). As a result of her formative research, four categories of student challenge behaviors emerged: procedural, evaluation, power, and practicality. Procedural challenges are behaviors that challenge both explicit and implicit rules (e.g., wanting to turn in work late, make up work after excessive absences). Evaluation challenges occur when students question testing procedures or grades (e.g., begging for a higher grade, questioning a grade on an assignment). Power challenges occur when students try to influence the teacher’s or other students’ behaviors in the class (e.g., questioning the teacher about their knowledge of a specific topic, attempts to embarrass the teacher). Finally, practicality challenges are behaviors that students use when they question the relevance of the course content/tasks (e.g., questioning the relevance to everyday life experiences, questioning the importance of the subject matter). Of the four types of challenges reported, the most relevant to the current study are practicality challenges.

Specifically, student practicality challenge behaviors may include student question-asking which may ultimately lead to increased student understanding. There is a distinct difference between a legitimate clarification question versus a “challenging” question and this difference is highlighted in the manner in which the question is asked, though these distinctions are beyond the scope of this dissertation.

Relevant to the current study are two of the four assumptions underlying previous question-asking research (Simonds, 1997b). The first is that the classroom inherently involves a socialization process in which students are participating agents in maintaining
and changing the classroom climate. A second assumption, based on Berger and Calabrese’s (1975) uncertainty reduction theory, is that uncertainty refers to the lack of predictability in the classroom situation. Therefore, students attempt to reduce levels of uncertainty using various information-seeking strategies, including question-asking. From time to time, their questions challenge the teacher (Simonds, 1997a), and sometimes the course content, which may result in a higher level of student understanding.

Student question-asking is one form of student-teacher interaction that results from the climate established through the teacher-student relationship. As such, the student-centered approach on which the Student Understanding Model is based allows us to understand student engagement as a function of their comfort level with the teacher. It is hypothesized that as student perceptions of instructional solidarity increase, students will be more motivated and more likely to engage in behaviors such as question asking, which, in turn, will increase reports of student understanding.

Learning

A primary goal of education is to facilitate learning. Instructional communication research has been focused primarily on two types of learning: affective and cognitive. Affective learning has been defined as “changes in interest, attitudes, and values, and the development of appreciation and adequate adjustment” (Bloom, 1956, p. 7). The affective domain generally describes the student’s internalized positive attitudes toward course content and/or the instructor (Kearney, 1994). Because affective learning has received much attention within the realm of instructional communication (Frymier, 1994b; McCroskey et al., 1985; Richmond & Gorham, 1996), many correlations between affective learning and other communication variables have been shown. For instance, a substantial amount of research has focused on the relationship between affective learning and immediacy (Andersen, 1979; Andersen & Andersen, 1982; Christophel, 1990; Gorham, 1988; Kelley & Gorham, 1988; Richmond et al., 1987). For this reason, it seems that a focus on teacher-student relationships and affective learning would simply be a reiteration of past research; thus, the focus of this dissertation will not be on affect, but cognition—particularly student understanding. It is noted that the next logical step in the learning process would include behavioral learning. Also referred to as
psychomotor learning, behavioral learning focuses on the development of physical skills (Bloom, 1956). Although behavioral learning is an admirable goal it is difficult (methodologically) to collect behavioral data in research and is beyond the scope of the current study.

Cognitive learning has been defined in terms of the “recall or recognition of knowledge and the development of intellectual abilities and skills” (Bloom, 1956, p. 7). According to Bloom, this involves both knowledge acquisition and one’s ability to understand and apply said knowledge. Bloom’s taxonomy of the cognitive domain includes six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. It is believed that each of these levels builds on the previous one. For instance, in order to comprehend information, one must first have the knowledge. Similarly, if one is to apply information, he/she must first comprehend it.

Like the focus on affective learning, cognitive learning has received much attention from instructional communication scholars (Chesebro & McCroskey, 2000; Frymier & Houser, 1999; Gorham, 1988; Krathwohl, Bloom, & Masia, 1964; Richmond et al., 1987). The difference, however, is not only conceptual, but there also seems to be the ongoing controversy of how to measure cognitive learning. Specifically, it is commonly believed that cognitive learning, or the amount of content one has mentally associated with other material, thus learned, can be measured by grades. Grades, however, are not always an accurate reflection of cognitive learning (Plax & Kearney, 1992). Because student learning outcomes are the focus of the theoretical model put forth in this study, it is important to review the current state of the conceptualization and operationalization of cognitive learning within instructional communication research.

The Cognitive Learning Dilemma

Perhaps the most cited problem within the study of instructional communication is how to measure cognitive learning (Richmond et al., 2006). This dilemma dates back to the time in which gaining access to observe a full range of teachers was a problem. Teachers of all types were unwilling to cooperate with researchers who wanted to come into the classroom and observe and/or report on their teaching behaviors. Thus, in 1986, Plax and his colleagues advanced the method of collecting data from students about teachers of “the last class you had before this one.” Therefore, when data collection
occurs in this manner, a representative range of (unidentified) teachers can be obtained. Although this method increases issues of external validity, the major problem associated with cognitive learning (how to measure it) still stands.

One solution to measuring cognitive learning was the use of standardized tests. There are problems associated with this measure of learning, however. First, one cannot be assured whether or not the teacher has attempted to teach what is included on the standardized test, and second, administering such tests can be extremely expensive and time consuming, and would require the collaboration of the students’ teachers. Considering these serious implications of using standardized tests, looking at final grades in the course was another approach to measuring cognitive learning. This method was also discarded due to the fact that students’ final grades often are not truly reflective of what was actually learned in the course. One caveat is that these two measures of cognitive learning are useful in controlled experiments, but often such experiments lack ecological validity. As a result of this concern surrounding how to measure cognitive learning, instructional communication researchers developed measures of student self-reports of learning.

The Learning Loss Measure (Richmond et al., 1987) consists of two items believed to reflect the amount of learning one has achieved in a class and the amount of learning one may have achieved with an ideal teacher. Specifically, students are asked, “On a scale of 0-9, how much did you learn in this class, with 0 meaning you learned nothing, and 9 meaning you learned more than any other class you had?” and “How much do you think you could have learned in the class had you had the ideal instructor?” When the score on the first item is subtracted from the score on the second item, a learning loss measure is achieved. Thus, the two scores are believed to reflect student reports of learning. Although the creators of the Learning Loss Measure (Richmond et al.) admit it may not be the most valid assessment of learning, it has, and continues to be, used in many instructional communication research studies.

As Ruth Anne Clark (2002) argues, “For those of us committed to high quality instruction, what students learn is the bottom line” (p. 396). Furthermore, according to McCroskey and Richmond (1992), “the primary goal, or desired outcome, of educational systems in the United States culture is student learning. What people include in their
definition of ‘learning’ varies but some of the aspects that are common include mastery of certain psychomotor behaviors, acquisition of many levels of cognitive understanding and synthesis” (p. 101). Therefore, it is the job of instructors to make such comprehension and synthesis a reality for our students. The concept “learning” then includes the idea that one or more levels of Bloom’s Taxonomy (1956) have been attained by the student. The student may only have some knowledge of the content, or he/she may be able to evaluate certain content; however, if some level of this taxonomy has not been acquired cognitive learning has not taken place.

As addressed, over the pasts decade various measures of cognitive learning have been developed (see Frymier & Houser, 1999; Richmond et al., 1987); however, the debate continues as to how to develop valid measure cognitive learning. As a field, we have much work ahead of us in terms of how we measure cognitive learning. Thus, the focus of this dissertation will be on student understanding as it is one outcome of the learning process.

Student Understanding

Student understanding may be conceptually defined as the student’s ability to explain and/or apply the content that has previously been comprehended and recalled. For example, a student may be able to recall material from a communication research methods course, but when asked to explain the process of regression, he/she may not have the ability to do so. Only after student understanding has been achieved will a student be able to accurately explain the process behind the analysis.

Based on the current issues surrounding the cognitive learning, in this study student understanding is proposed as a new way to conceptualize student learning. Although it is the hope that student understanding will be a significant contribution to instructional communication literature, both conceptually and operationally. Unfortunately, because it is a newly created variable, there is no previous research surrounding this construct specifically. Therefore, a review of literature on student understanding in this dissertation is limited. The conceptualization of student understanding, however, is in large part based on literature surrounding clarity. Therefore, a review of clarity literature is warranted.
Clarity

Based on the transactional nature of communication, it is apparent that teachers and students both share in the responsibility to clarify course content. Teacher clarity provides logical sequence and structure to course content but students also have the responsibility to ask questions, paraphrase content, or provide examples to clarify their understanding. Thus, teacher clarity is related to student understanding, though these constructs are substantively different. Student understanding may be achieved when content meaning is shared between interactants – in this context, teachers and students. Unfortunately, previous instructional communication has treated clarity as a one-sided variable, with no regard to the interaction that must take place for clarification to be successful. Therefore, the current study will not focus on the teacher-centered variable of clarity, but rather the more inclusive relational construct of student understanding. Because much of the work on clarity has been on teacher clarity, however, it is essential to review the literature on this concept in order to distinguish student understanding as the central learning process outcome which serves as the focus of this dissertation.

Beginning in 1971, Rosenshine and Furst put forth the argument that teacher clarity was the most important teacher behavior worthy of our research and training; thus, they are generally credited with bringing this concept to the attention of instructional communication researchers. Since that time, much subsequent instructional research has focused on this construct. Some of the seminal work on teacher clarity is developed in the well-cited Ohio State studies.

Between 1975 and 1985, researchers at Ohio State conducted a series of studies on teacher clarity. The original goal of this program of research was to identify specific teaching behaviors that students perceived as enhancing course content. In the first study, junior high students were surveyed and asked to recall their clearest teacher and to list five things that the teacher had done when teaching (Cruickshank, Myers, & Moenjak, 1975). Upon conclusion of this study, 110 distinct teacher behaviors were reported and ultimately categorized into twelve groups which characterized teacher clarity; these categories include repeating/stressing difficult points, teaching in a step-by-step manner, and communicating so students understand. As a follow up to this research, Bush, Kennedy, and Cruickshank (1977) used the 110 teacher behaviors to create
measures to discriminate between clear and unclear teachers. The behaviors that most accurately distinguished clear from unclear teachers fell within two factors: explaining content and providing material for student understanding. Unfortunately, the work on teacher clarity behaviors was not without its limitations. One distinct area of difficulty was in creating a cogent conceptual definition of the construct.

Over the years, several different conceptual definitions of teacher clarity have been identified. In 1986, Cruickshank and Kennedy defined teacher clarity as “a cluster of teacher behaviors that result in learners gaining knowledge or understanding of a topic, if they possess adequate interest, aptitude, opportunity, and time” (p. 43). Powell and Harville (1990) claimed that teacher clarity is “concerned with the fidelity of the instructional messages” (p. 372). Simonds (1997a) defined clarity as “the teacher’s ability to present knowledge in a way that students understand” (p. 279). And finally, Chesebro (1999) has conceptualized teacher clarity as “the process by which a teacher is able to effectively deliver the desired meaning of course content in the minds of students through the use of appropriately structured nonverbal and verbal messages” (p. 3).

Nevertheless, regardless of the definitional debate over teacher clarity, Civikly (1992) makes a strong point regarding the importance of teacher clarity when he states, “when viewed in relationship to ‘teacher knowledge,’ clarity may be seen as a connecting element between content and pedagogy since it represents an instrument’s capacity to transfer the cognitive dimension of teaching into visible instructional behaviors” (p. 30).

As the teacher clarity construct became increasingly popular among researchers, it became evident that much of the work had not investigated the relationship between clarity and other desired outcomes, such as student understanding. Therefore, communication scholars quickly became interested in the relationship of clarity to other communication variables. Some of this research has focused on verbal clarity including qualities such as fluency (Hiller, Fisher, & Kaess, 1969), vagueness (Land, 1979), and verbal mazes (Smith, 1977). Additionally, some work on teacher clarity behaviors has centered on the structuring of presentations: organization, discontinuity, the use of advanced organizers (Alexander, Frankiewicz & Williams, 1979; Ausubel, 1963), and transitions and internal previews and reviews (Cruickshank & Kennedy, 1986).
The nonverbal element of clarity is generally related to the use of time spent by instructors covering a topic as well as their speaking pace. In addition, it has been argued that teacher immediacy behaviors may be considered a nonverbal element of teacher clarity (Sidelinger & McCroskey, 1997). Specifically, immediacy behaviors function to increase student attention to teacher verbal behaviors. More recently, teacher clarity research has expanded the construct of clarity to include the classroom processes in addition to course content (Kendrick & Darling, 1990; Simonds, 1997a). After many studies had been conducted regarding the conceptualization of clarity, the focus then turned to the question of how to measure teacher clarity behaviors.

In 1997, Simonds created the Teacher Clarity Report (TCR) in which she attempted to expand the notion of clarity beyond the realm of content presentation. The scale consists of twenty Likert-type items. One half of the items are related to the clear communication of course content and includes things such as "uses examples when presenting content," "uses the board, transparencies, or other visual aids during class," and "gives previews of material to be covered" (Simonds, 1997a, p. 289). The additional ten items in the instrument were designed to measure the extent to which teachers are clear in communicating classroom processes. The expanded notion of clarity includes the communication of how assignments should be approached, the relevance of course work to students, and the use of feedback to enhance classroom understanding (Simonds, 1997a).

At the same time, Sidelinger and McCroskey (1997) were also developing a measure of teacher clarity. An expanded version of the scale used by Powell and Harville (1990), this instrument contains items related to the clarity of written communication in the classroom such as syllabi. Consisting of 22 items, this scale also includes items related to the communication of classroom processes, including "projects assigned for the class have unclear guidelines," "my teacher is not clear when defining guidelines for out of class assignments," and "my teacher is ambiguous when setting guidelines for the class" (Sidelinger & McCroskey, 1997, pp. 4-5).

In the subsequent year, Chesebro and McCroskey (1998) argued that teacher clarity measures previously published were “disappropriate in length when compared to common instructional measures, such as measures of immediacy, student state
motivation, and student affect” (p. 262). Therefore, they published the Teacher Clarity Short Inventory (TCSI) that consisted of only ten items and measured the clarity of both instructional content and instructional processes. As a result, researchers began using this shorter measure of teacher clarity to investigate its relationship to constructs such as receiver apprehension and affect (Chesebro, 2003) and student motivation (Comadena, Hunt, & Simonds, 2007). Little research, however, has considered the role of the student in the more inclusive construct of student understanding.

As argued by Simonds (1997a), clarity is not just the responsibility of the teacher, but also the responsibility of the student and thus, in essence, is a relational construct. Historically, research on teacher clarity has been situated within a process-product paradigm where the variable is studied in its relationship to various student outcomes. Civikly (1992) may have been the first to extend teacher clarity to include not only teacher message clarity, but student clarification strategies. Civikly argued that teacher clarity is a communication variable that may affect the relational climate within a classroom context. Research indicates that student clarification techniques are, indeed, part of the clarity process (Darling, 1989; Kendrick & Darling, 1990; West & Pearson, 1994). In fact, students not only ask questions about subject matter, but also about tasks, content relevance, evaluation procedures, and classroom procedures (Simonds, 1997a). The way teachers respond to student clarification tactics influences the relational climate of the classroom (Mottet, Garza, Beebe, Houser, Jurrells, & Furler, 2008). It seems that this, in turn, may positively influence student understanding.

When student understanding occurs, a student should not only be able to recall concepts learned and examples used, but fully understand how the content relates (cognitively) to their existing knowledge. Put simply, clarity should be conceptualized as multidimensional, consisting of both content and process dimensions (Simonds, 1997a). Therefore, consistent with past literature, student understanding should include the student’s ability to understand not only course content, but processes that occur within the classroom environment. When a student achieves understanding, s/he should be able to fully understand class examples, relate material to past experiences, and understand teacher expectations in terms of assignments and quality of work.
Because the theoretical model advanced in this dissertation includes both teacher and student behaviors and views clarity as an outcome of the learning process, one of the goals of the current dissertation is to introduce a more advanced conceptualization of student understanding as a novel concept to instructional communication research. Much research has focused on *teacher clarity behaviors* while little work has centered on student clarity as understanding (Kendrick & Darling, 1987; Simonds, 1997a, 1997b). Although teacher clarity behaviors are very important to the facilitation of learning, we should be focused on whether or not these behaviors enhance student understanding.

The focus of this study, then, is to examine the relationship between student perceptions of instructional solidarity and student understanding. In addition, it is important to test whether one or more mediating variables increase the ability of the student-teacher relationship to predict student understanding. The Student Understanding Model (SUM) presented in the current study highlights the importance of student engagement via student motivation and question-asking.

*Problem Statement*

The problem addressed in this dissertation is not a lack of research investigating the relationship between teacher attributes and student attitudes, but rather if and how much the teacher-student relationship (instructional solidarity) contributes to student understanding. Instructional communication research is lacking empirical evidence to support the link between teacher-student relationships and student understanding. Studying teacher-student relationships within the context of a comprehensive theoretical model of student understanding allows us to advance our understanding of the process by which students learn. In summary, the focus of this dissertation is the application of the causal process student understanding model of learning to explain both teacher and student behaviors that affect student perceptions of instructional solidarity as well as the link between instructional solidarity and student understanding via student question-asking and motivation as moderators within the classroom environment.

Teacher and student behaviors are critical to the development of student perceptions of instructional solidarity. Specifically, teacher immediacy, caring, and shared control should impact student perceptions of instructional solidarity. In addition,
Student behaviors such as student immediacy and affinity-seeking will also create student perceptions of instructional solidarity. Stated formally:

H1a: Teacher behaviors (teacher immediacy, teacher caring, and shared control) will positively relate to instructional solidarity.

H1b: Student behaviors (student immediacy and student affinity-seeking strategies) will positively relate to instructional solidarity.

Student perceptions of instructional solidarity may provide a more comfortable learning environment for both teacher and student. If students perceive instructional solidarity with the teacher, they may feel more comfortable asking questions in class. Therefore, the following hypothesis is put forth:

H2: Student perceptions of instructional solidarity will positively relate to student content-related question-asking.

In addition to creating a more comfortable learning environment, instructional solidarity may also function to motivate students to perform well in class because they may not want to disappoint their teacher. Thus, the resulting hypothesis is:

H3: Student perceptions of instructional solidarity will positively relate to student motivation.

Past research suggests that as students become more engaged in course content, they are more apt to indicate behaviors of understanding. When students ask questions related to course content, they should become more engaged in the material and, in turn, should increase their comprehension, recall, and understanding. In addition, when students are motivated to do well in a course, they should spend more time engaged in the learning process, resulting in increased student understanding. Conclusions from previous studies suggest that instructional solidarity will predict more of the variance in student understanding when student question-asking and motivation are added to the model as unique moderators.

H4: Controlling for the effects of each other, instructional solidarity, student content-related question-asking, and student motivation will be positively related to student understanding.
The Student Understanding Model

First, teacher behaviors (teacher immediacy, teacher caring, and shared control) will be tested as significant predictors of student perceptions of instructional solidarity (H1). Second, student perceptions of instructional solidarity will be tested as a significant predictor of student content-related question-asking (H2) and student motivation (H3). In the final hypothesis the Student Understanding Model (SUM) will be tested using a system of simultaneous regression equations.

Figure 2.1 Proposed Student Understanding Model: A Causal Process Model
Chapter Three: Methods

The instructional communication process is situated within a relational context to test the Student Understanding Model (SUM). The purpose of this dissertation is to test a predictive model that explains how teacher-student interactions influence student perceptions of instructional solidarity, which, in turn, impact student understanding when mediated through student content-related question-asking and student motivation. Specifically, the current study employs several psychometric measures related to teacher-student interactions and instructional solidarity. Presented in this chapter are the details of the participants, setting, measures, data collection procedures, and a preview of the data analyses to test the causal process model. Initially, however, details of a pilot study that preceded the main study are presented.

Pilot Study

In 2007 a pilot study for the current dissertation was conducted in which the relationship between teacher immediacy, teacher caring, and shared control and student perceptions of instructional solidarity was tested. The subjects for this study consisted of 553 undergraduate students at the University of Kentucky enrolled in lower-level communication courses. Participation served as completion of a departmental research requirement. Generally, participants in this study represented a cross-section of university students and academic disciplines, and reported on 74 different majors. Participants in sample in the pilot study consisted of 289 females and 264 males. In terms of ethnicity, 88.6% were Caucasian/white, 6.7% were African-American, 2% were Asian-American, .5% were Hispanic/Latino, .7% were Eastern/Arab-American, and .4% were Native American. In terms of class rank, respondents reported the following: 276 freshmen, 175 sophomores, 68 juniors, and 34 seniors. Utilizing the method originally developed by Plax and his colleagues (1986), respondents were asked to report on the teacher-student relationship with the instructor of the class they had immediately before the course in which they completed the survey instruments for credit. In order to ensure that students were familiar with their instructors’ communication behaviors and had adequate time to develop perceptions of interpersonal solidarity, data collection took place during the 13th and 14th weeks in the semester.
Participants in this study were initially briefed in their classes on the logistics of the study. They were then informed that their involvement in this research study was voluntary and they were provided all instructions necessary to complete the survey. The research study was announced in selected lower-level communication classes and was administered on-line, through a university-run service hosting on-line surveys. Students were directed to the appropriate website where they could access the survey and complete it. When the participants had finished they were debriefed. All data collected were completely anonymous. The instruments used in this study were as follows:

*Teacher Immediacy.* Immediacy was operationalized using a revised version of Andersen’s (1979) Generalized Immediacy Index. The revised version was made up of a 17-item 5-point Likert-type scale that ranges from 1 (Never) to 5 (Very Often). Possible scores ranged from 17-105. Alpha reliability for this scale was .925, \( M = 61.60, SD = 13.73 \).

*Teacher caring.* Teacher caring was operationalized using Teven and McCroskey’s (1997) Teacher Caring scale, which consists of five items measured on a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree) with possible scores ranging from 5-25. Alpha reliability for this scale was .807, \( M = 17.94, SD = 3.90 \).

*Shared control.* Shared control was measured using a revised version of Frymier, Shulman, and Houser’s (1996) Learner Empowerment Measure. This Likert-type 10-item scale included a 1 (Never) to 5 (Very Often) format; therefore, possible scores ranged from 10-50. Previous alpha reliability for this scale was .86. Alpha reliability for this scale was .898, \( M = 29.24, SD = 8.37 \).

*Instructional Solidarity.* Instructional solidarity was operationalized using a revised version of Wheeless’ (1976) Interpersonal Solidarity Scale. Wording of the items was revised to apply to the teacher-student relationship particularly. This scale consisted of 20 items measured on a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Possible scores on this measure ranged from 20-100. Alpha reliability for this scale was .915, \( M = 53.69, SD = 12.74 \).

Results of the pilot study indicated the relational variables teacher caring, shared control, and immediacy positively correlated with instructional solidarity. In addition to
simple Pearson correlation, regression analysis was used to investigate the predictive value of teacher immediacy, teacher caring, and shared control for instructional solidarity. Results indicated these predictor variables accounted for 56.5% of the variance of instructional solidarity, \( F(3, 549) = 237.952, p < .01 \). All three predictor variables had significant beta weights in the regression model: teacher caring, \( \beta = .29, t = 7.29, p < .01 \); immediacy, \( \beta = .17, t = 4.34, p < .01 \); and shared control, \( \beta = .41, t = 11.11, p < .01 \) (Dobransky, 2007).

Overall, based upon the pilot study (Dobransky, 2007) many of the newly created measures used in the current dissertation were found to be reliable. Moreover, results of the pilot study indicated a positive relationship between the predictor variables of shared control, immediacy, and teacher caring and instructional solidity. This study supports Frymier and Houser’s (2000) argument that teacher-student relationships are inherently (at least partially) interpersonal in nature. Moreover, various teacher behaviors, such as shared control, immediacy, and teacher caring, do positively relate to student perceptions of such a relationship. In fact, over 55% of the variance in instructional solidity was accounted for by these three relational variables. Therefore, behaviors instructors engage in significantly related to student perceptions of instructional solidity. Based on the results of the pilot study, student perceptions of instructional solidity, in turn, should impact other outcome variables, such as student understanding. Next, a detailed explanation of the participants, procedures, measures, and planned analyses are provided.

**Dissertation: Main Study**

**Research Participants**

Participants for this study were recruited from the University of Kentucky located in Lexington, Kentucky in Fall semester, 2007. Specifically, the subjects for this study consisted of 302 undergraduate students currently enrolled in COM 252, Introduction to Interpersonal Communication. The demographic breakdown of participants in this study was 154 females (51%) and 148 males (49%); 275 Caucasian (91.1%), 15 African-American (5%), 4 Asian/Asian American (1.3%), 1 Hispanic/Latino (0.3%), 1 Native American (0.3%), and 6 unidentified (2%). In terms of class rank, the breakdown was 51 freshmen (16.9%), 141 sophomores (46.7%), 79 juniors (26.2%), and 31 seniors (10.2%).
Ages of participants in this study ranged from 18-46 years. Finally, in terms of instructor
gender, seven female teachers and one male teacher were the targets of the student
responses.

Considering the large number of variables \((n = 9)\) in the causal process model to
be tested, an a priori power analysis was conducted using the computer program
G*Power 3.0.9. For this analysis, alpha was set at .05 and power at .95. Power analyses
were calculated and the results indicate that for a moderate effect size, \(f^2 = .15, F(8, 151) = 2.00, \lambda = 24.00\), minimum \(N = 160\). Therefore, a sample of 302 participants was judged
to be sufficient to minimize Type II error and to test the Student Understanding Model.

**Research Design/Procedure**

Participation in the current study was voluntary but served to fulfill an
undergraduate departmental requirement. Participants were asked to report on the
teacher-student relationship with the instructor of the class in which they completed the
instrument for credit. Unlike the pilot study, the participants did not report on the teacher
they had immediately prior to the class they completed for the survey. At the onset of the
current study a measure of student knowledge acquisition was included which made it
necessary to test all students on the same content. This measure was later excluded from
the study, and the reasons are outlined in detail in the final chapter of this document.
Finally, prior to data collection, consent was obtained from the instructors of all classes.

Participants in this study were initially briefed in their Introduction to
Interpersonal Communication (COM 252) classes on the logistics of the study, including
directions on how to access the website containing the on-line survey. Upon completion
of the survey, participants were debriefed. Data collected were completely anonymous.
A university-supported service provided the hardware (webserver) and software
(MRInterview) for data collection. Initially, participants were instructed to read the
consent form, which served as the first page of the web survey, and then to click
“continue” to consent to participation in the study. If the student was not willing to
participate in the study, he/she was instructed to close the browser. After consent was
obtained, the participant was instructed to click “next” and begin the questionnaire.
Following is a review of the measures included in the current study: teacher immediacy,
teacher caring, shared control, student immediacy, student affinity-seeking, instructional solidarity, student motivation, student question-asking, and student understanding.

*Measures*

*Teacher Immediacy*

Teacher immediacy was operationalized using a revised version of Andersen’s (1979) Generalized Immediacy Index. The revised version initially consisted of 17 items on a 5-point Likert-type scale ranging from 1 (Never) to 5 (Very Often). Using a two-stage process, and Eigenvalues > 1 criteria, factor analysis was employed and items that did not load cleanly using a 60-40 split (McCroskey & Young, 1979) were removed. The resulting measure consisted of 12 items. A subsequent principal components factor analysis resulted in a single factor with an Eigenvalue of 5.21 accounting for 43.42% of the total variance (see Table 3.2). In addition, the 12-item teacher immediacy scale was internally consistent with a corresponding Cronbach coefficient alpha reliability of .88 [\(M = 52.61, SD = 5.79\)].
Table 3.1. *Means, Standard Deviations, and Factor Loadings for Teacher Immediacy*

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Uses personal examples or talks about what experiences s/he had had outside of class</td>
<td>4.31</td>
<td>.80</td>
<td>.601</td>
</tr>
<tr>
<td>2. Looks at the class while talking</td>
<td>4.85</td>
<td>.39</td>
<td>.654</td>
</tr>
<tr>
<td>3. Uses humor in class</td>
<td>4.43</td>
<td>.74</td>
<td>.646</td>
</tr>
<tr>
<td>4. Addresses students by name</td>
<td>4.56</td>
<td>.72</td>
<td>.626</td>
</tr>
<tr>
<td>5. Refers to this class as “our” class or what “we” are doing</td>
<td>4.49</td>
<td>.65</td>
<td>.644</td>
</tr>
<tr>
<td>6. Smiles at the class while talking</td>
<td>4.43</td>
<td>.76</td>
<td>.736</td>
</tr>
<tr>
<td>7. Praises students’ work, actions, or comments</td>
<td>4.00</td>
<td>.89</td>
<td>.721</td>
</tr>
<tr>
<td>8. Asks questions or encourages students to talk</td>
<td>4.45</td>
<td>.67</td>
<td>.736</td>
</tr>
<tr>
<td>9. Has a very relaxed body position while talking to the class</td>
<td>4.28</td>
<td>.71</td>
<td>.682</td>
</tr>
<tr>
<td>10. Gets into conversations with individual students before or after class</td>
<td>3.96</td>
<td>.92</td>
<td>.652</td>
</tr>
<tr>
<td>11. Is animated while talking to students</td>
<td>4.25</td>
<td>.81</td>
<td>.735</td>
</tr>
<tr>
<td>12. Frequently makes eye contact with students</td>
<td>4.58</td>
<td>.63</td>
<td>.728</td>
</tr>
</tbody>
</table>
Teacher Caring

In this dissertation, teacher caring was operationalized using Teven and McCroskey’s (1997) Teacher Caring scale, which consists of five items measured on a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). The results of a principal components factor analysis yielded a single factor with an Eigenvalue of 3.18 accounting for 63.75% of the total variance (see Table 3.3). Cronbach’s alpha reliability for the teacher caring scale is .843 \[ M = 19.95, SD = 3.38 \].

Table 3.2. Means, Standard Deviations, and Factor Loadings for Teacher Caring

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cares about me</td>
<td>3.96</td>
<td>.77</td>
<td>.863</td>
</tr>
<tr>
<td>2. Has my best interest at heart</td>
<td>4.04</td>
<td>.77</td>
<td>.864</td>
</tr>
<tr>
<td>3. Is unconcerned with me</td>
<td>3.80</td>
<td>1.01</td>
<td>.697</td>
</tr>
<tr>
<td>4. Is understanding</td>
<td>4.18</td>
<td>.74</td>
<td>.828</td>
</tr>
<tr>
<td>5. Is insensitive</td>
<td>3.95</td>
<td>1.00</td>
<td>.723</td>
</tr>
</tbody>
</table>

Shared Control

In the present study, shared control was measured using a revised version of Frymier et al.’s (1996) Learner Empowerment Measure. This Likert-type item scale employed a 1 (Never) to 5 (Very Often) format. Items on the original measure included “I have the power to make a difference in how things are done in this class,” “I have a choice in the methods I can use to perform my work,” and “I can make an impact on the way things are run in this class.” In a two-stage process, principal components factor analysis was employed initially, and in the second step items that did not load cleanly using a 60-40 split (McCroskey & Young, 1979) and did not result in a factor with an Eigenvalue > 1 were removed, resulting in a scale consisting of eight items. Principal components factor analysis resulted in a single factor with an Eigenvalue of 4.31 accounting for 53.87% of the total variance (see Table 3.4). In the present research study, the alpha reliability was .88 \[ M = 25.87, SD = 5.45 \].
Table 3.3. Means, Standard Deviations, and Factor Loadings for Shared Control

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have the power to make a difference in how things are done in this class</td>
<td>3.15</td>
<td>.94</td>
<td>.796</td>
</tr>
<tr>
<td>2. I have a choice in the methods I can use to perform my work</td>
<td>3.54</td>
<td>.84</td>
<td>.654</td>
</tr>
<tr>
<td>3. My participation is important to the success of this class</td>
<td>3.55</td>
<td>.89</td>
<td>.643</td>
</tr>
<tr>
<td>4. I can make an impact on the way things are run in this class</td>
<td>3.10</td>
<td>1.00</td>
<td>.860</td>
</tr>
<tr>
<td>5. I have the opportunity to contribute to the learning of others in this class</td>
<td>3.53</td>
<td>.88</td>
<td>.774</td>
</tr>
<tr>
<td>6. I have the opportunity to make important decisions in this class</td>
<td>3.13</td>
<td>.98</td>
<td>.800</td>
</tr>
<tr>
<td>7. I can determine how tasks can be performed</td>
<td>3.05</td>
<td>.97</td>
<td>.653</td>
</tr>
<tr>
<td>8. I can influence the instructor</td>
<td>2.83</td>
<td>.89</td>
<td>.656</td>
</tr>
</tbody>
</table>

**Student Immediacy**

In this study immediacy was measured using a revised version of the teacher immediacy measure created for this study, in which the items were adapted to indicate student reports of their own behaviors. When originally created (for the pilot study) this scale included nine items measured on a five-point Likert-type scale ranging from 0 (Never) to 4 (Very Often). Items on this scale include, “I move closer to my teacher when talking to him/her,” “I use a monotone/dull voice when talking to my teacher,” and “I make eye contact with my teacher while talking.” Consistent with the operationalization of the teacher immediacy behaviors measures, items on this scale reflected both verbal and nonverbal immediacy behaviors. Following principal components factor analysis, and subsequently removing items that did not load cleanly using a 60-40 split (McCroskey & Young, 1979), six items remained, which yielded a single factor with an Eigenvalue of
3.512 accounting for 58.54% of the total variance (see Table 3.5). The resulting scale reliability of the 6-item scale was .86 \[ M = 21.30, SD = 4.39 \].

Table 3.4. Means, Standard Deviations, and Factor Loadings for Student Immediacy

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I use personal examples and/or talk about personal experiences in class</td>
<td>3.32</td>
<td>1.05</td>
<td>.794</td>
</tr>
<tr>
<td>2. I make eye contact with my teacher while talking</td>
<td>4.24</td>
<td>.75</td>
<td>.677</td>
</tr>
<tr>
<td>3. I use humor when talking with my teacher</td>
<td>3.45</td>
<td>1.06</td>
<td>.841</td>
</tr>
<tr>
<td>4. I smile at my teacher when talking to him/her</td>
<td>3.80</td>
<td>.88</td>
<td>.710</td>
</tr>
<tr>
<td>5. I engage in conversation with my teacher before or after class</td>
<td>3.15</td>
<td>1.02</td>
<td>.776</td>
</tr>
<tr>
<td>6. I am animated when talking to my teacher</td>
<td>3.34</td>
<td>.95</td>
<td>.781</td>
</tr>
</tbody>
</table>

**Student Affinity-Seeking**

For purposes of this study, a measure of student affinity-seeking behaviors was created based on the 25 item affinity-seeking typology originally developed by Bell and Daly (1984). When created for the main study, the student affinity-seeking measure included 16 of the original 25 items measured on a 5-point Likert-type scale ranging from 1 (Never) to 5 (Always); however, following the removal of items that did not load cleanly using a 60-40 split (McCroskey & Young, 1979) or have an Eigenvalue > 1, the resulting scale included seven items. The final measure resulted in a single factor with an Eigenvalue of 3.52 accounting for 50.29% of the total variance (see Table 3.6). Items on the scale included “I am friendly with my teacher,” “I invite my teacher to social events
outside of class,” “I laugh at my teacher’s jokes,” and “I try to get my teacher to remember me.” Alpha reliability for this scale was .834 [$M = 22.37$, $SD = 4.92$].

Table 3.5. Means, Standard Deviations, and Factor Loadings for Student Affinity-Seeking

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I volunteer to help my teacher when he/she needs it</td>
<td>3.03</td>
<td>.98</td>
<td>.697</td>
</tr>
<tr>
<td>2. I am friendly with my teacher</td>
<td>4.19</td>
<td>.71</td>
<td>.607</td>
</tr>
<tr>
<td>3. I ask about my teacher’s feelings/views</td>
<td>2.72</td>
<td>1.11</td>
<td>.738</td>
</tr>
<tr>
<td>4. I try to get my teacher to remember me</td>
<td>2.95</td>
<td>1.09</td>
<td>.740</td>
</tr>
<tr>
<td>5. I compliment my teacher</td>
<td>2.40</td>
<td>1.11</td>
<td>.833</td>
</tr>
<tr>
<td>6. I try to be sympathetic to my teacher’s problems</td>
<td>3.22</td>
<td>1.09</td>
<td>.701</td>
</tr>
<tr>
<td>7. I laugh at my teacher’s jokes</td>
<td>3.86</td>
<td>.77</td>
<td>.624</td>
</tr>
</tbody>
</table>

Instructional Solidarity

In the current study instructional solidarity was operationalized using a revised version of Wheeless’ (1976) Interpersonal Solidarity Scale. Wording of the items was revised to apply to the teacher-student relationship. When created for the pilot study, the instructional solidarity scale consisted of 20 items measured on a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Previous alpha reliability for this scale was .915, [$M = 53.69$, $SD = 12.74$] (Dobransky, 2007). Principal components factor analysis was employed and items that did not load cleanly using a 60-40 split (McCroskey & Young, 1979) were removed. The resulting scale reliability of the 9-item instructional solidarity scale was .86 [$M = 26.38$, $SD = 5.78$]. The two-stage factor analysis resulted in a single factor with an Eigenvalue of 4.304 accounting for 53.80% of the total variance.
Table 3.6. Means, Standard Deviations, and Factor Loadings for Instructional Solidarity

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My teacher and I are very close to each other</td>
<td>2.42</td>
<td>.92</td>
<td>.844</td>
</tr>
<tr>
<td>2. I feel very close to my teacher</td>
<td>2.44</td>
<td>.84</td>
<td>.809</td>
</tr>
<tr>
<td>3. My teacher has a great deal of influence over my behavior</td>
<td>2.57</td>
<td>.97</td>
<td>.755</td>
</tr>
<tr>
<td>4. I willingly disclose a great deal of positive and negative things about myself, honestly, and fully to this person</td>
<td>2.40</td>
<td>1.06</td>
<td>.716</td>
</tr>
<tr>
<td>5. I dislike my teacher</td>
<td>4.29</td>
<td>.83</td>
<td>.654</td>
</tr>
<tr>
<td>6. My teacher and I are not very close at all</td>
<td>2.86</td>
<td>1.09</td>
<td>.712</td>
</tr>
<tr>
<td>7. I trust my teacher completely</td>
<td>3.43</td>
<td>.95</td>
<td>.693</td>
</tr>
<tr>
<td>8. I understand my teacher and who he/she really is</td>
<td>3.07</td>
<td>.92</td>
<td>.677</td>
</tr>
<tr>
<td>9. My teacher and I share a lot in common</td>
<td>2.90</td>
<td>.79</td>
<td>.642</td>
</tr>
</tbody>
</table>

**Student Motivation**

In this study student motivation was measured using Richmond’s (1990) Motivation Scale. This measure consisted of nine, seven-point bi-polar adjectives, which is an expansion of Beatty, Forst, and Stewart’s (1986) three-item scale. This scale asks students how they feel about studying for the class they are reporting on and how they feel about studying in general. Specific items included on this measure included “Motivated-Unmotivated,” “Interested-Uninterested,” “Involved-Uninvolved,” “Stimulated-Not Stimulated,” and “Want to study-Don’t want to study.” Previous alpha
reliability for this scale was .95 (Richmond, 1990). Again, principal components factor analysis was employed and yielded a single factor with an Eigenvalue of 5.05 accounting for 56.11% of the total variance. In the present study, alpha reliability was .898 \[ M = 33.23, SD = 5.78 \].

Table 3.7. Means, Standard Deviations, and Factor Loadings for Student Motivation

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Motivated</td>
<td>3.92</td>
<td>.82</td>
<td>.794</td>
</tr>
<tr>
<td>2. Interested</td>
<td>4.14</td>
<td>.74</td>
<td>.821</td>
</tr>
<tr>
<td>3. Not Stimulated</td>
<td>3.70</td>
<td>.88</td>
<td>.729</td>
</tr>
<tr>
<td>4. Don't want to study</td>
<td>3.04</td>
<td>1.00</td>
<td>.633</td>
</tr>
<tr>
<td>5. Inspired</td>
<td>3.48</td>
<td>.88</td>
<td>.703</td>
</tr>
<tr>
<td>6. Unenthused</td>
<td>3.55</td>
<td>.86</td>
<td>.736</td>
</tr>
<tr>
<td>7. Not fascinated</td>
<td>3.53</td>
<td>.89</td>
<td>.791</td>
</tr>
<tr>
<td>8. Important</td>
<td>3.72</td>
<td>.90</td>
<td>.759</td>
</tr>
<tr>
<td>9. Useful</td>
<td>4.30</td>
<td>.84</td>
<td>.758</td>
</tr>
</tbody>
</table>

**Student Question-Asking**

Student question-asking was operationalized in this dissertation with a scale created for this study. Specifically, the question-asking scale initially included 10 items measured on a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Items on the measure included “I ask a lot of questions in class,” and “I often ask questions to clarify assignment guidelines.” Items were developed to measure student questions about both content relevance and classroom processes. A two-stage process was used beginning with principal components factor analysis. In the second stage, items that did not load cleanly using a 60-40 split (McCroskey & Young, 1979) were removed. The resulting scale reliability of the 6-item measure was .78 \[ M = 20.25, SD = 3.81 \]. Further, the principal components factor analysis resulted in a single factor with an Eigenvalue of 2.87 accounting for 47.81% of the total variance.
Table 3.8. Means, Standard Deviations, and Factor Loadings for Student Question-Asking

<table>
<thead>
<tr>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I ask a lot of questions in class</td>
</tr>
<tr>
<td>2. I often ask questions to clarify assignment guidelines</td>
</tr>
<tr>
<td>3. I feel comfortable asking the teacher to provide examples</td>
</tr>
<tr>
<td>4. I never ask questions about upcoming exams/quizzes</td>
</tr>
<tr>
<td>5. When my teacher asks if there are any questions, I rarely speak up</td>
</tr>
<tr>
<td>6. If I ask a question and I don’t understand the answer, I will usually ask a follow up question</td>
</tr>
</tbody>
</table>

**Student Understanding**

When initially created for this study, the student understanding measure consisted of 10 items on a 5-point Likert-type scale ranging from 1 (Never) to 5 (Always). Consistent with previous analyses, a two-stage factor analysis procedure was employed. Following principal components factor analysis and the removal of items that did not load cleanly using a 60-40 split (McCroskey & Young, 1979), the resulting scale included eight items. Specifically, items on this scale included “I understand examples the teacher uses in class,” “I know how to prepare for exams/quizzes,” and “I can see how the activities in class relate to what we are learning.” Principal components factor analysis resulted in a single factor with an Eigenvalue of 5.80 accounting for 72.52% of the total variance. Alpha reliability for this scale was .943 [$M = 34.30, SD = 5.11$].
Table 3.9. *Means, Standard Deviations, and Factor Loadings for Student Understanding*

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I understand examples the teacher uses in class</td>
<td>4.42</td>
<td>.71</td>
<td>.861</td>
</tr>
<tr>
<td>2. I understand how to apply concepts learned in class</td>
<td>4.33</td>
<td>.73</td>
<td>.928</td>
</tr>
<tr>
<td>3. I can see connections between course concepts and</td>
<td>4.39</td>
<td>.76</td>
<td>.855</td>
</tr>
<tr>
<td>situations in my life</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I understand the assignments in class and</td>
<td>4.23</td>
<td>.74</td>
<td>.874</td>
</tr>
<tr>
<td>how they should be done</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I can see how the activities in class relate to</td>
<td>4.34</td>
<td>.75</td>
<td>.890</td>
</tr>
<tr>
<td>what we are learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I know how to find answers when I have questions</td>
<td>4.26</td>
<td>.70</td>
<td>.855</td>
</tr>
<tr>
<td>7. I know how to prepare for exams/quizzes</td>
<td>4.11</td>
<td>.86</td>
<td>.744</td>
</tr>
<tr>
<td>8. When new concepts are introduced in class, I can</td>
<td>4.12</td>
<td>.81</td>
<td>.792</td>
</tr>
<tr>
<td>relate the material to other content I have already</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learned</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Chapter Four: Results

To test the causal process Student Understanding Model (SUM), a system of simultaneous regression analyses were performed. A descriptive table is provided below (see Table 4.1) for all variables.

Table 4.1 *Descriptive Table for All Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Immediacy</td>
<td>302</td>
<td>24</td>
<td>60</td>
<td>52.15</td>
<td>6.33</td>
</tr>
<tr>
<td>Teacher Caring</td>
<td>302</td>
<td>5</td>
<td>25</td>
<td>19.67</td>
<td>3.44</td>
</tr>
<tr>
<td>Student Immediacy</td>
<td>302</td>
<td>8</td>
<td>30</td>
<td>21.36</td>
<td>4.37</td>
</tr>
<tr>
<td>Affinity Seeking</td>
<td>302</td>
<td>10</td>
<td>35</td>
<td>22.56</td>
<td>4.97</td>
</tr>
<tr>
<td>Control</td>
<td>302</td>
<td>8</td>
<td>40</td>
<td>26.09</td>
<td>5.49</td>
</tr>
<tr>
<td>Question Asking</td>
<td>302</td>
<td>6</td>
<td>30</td>
<td>20.19</td>
<td>3.74</td>
</tr>
<tr>
<td>Student Understanding</td>
<td>302</td>
<td>16</td>
<td>40</td>
<td>33.82</td>
<td>5.30</td>
</tr>
<tr>
<td>Motivation</td>
<td>302</td>
<td>10</td>
<td>45</td>
<td>32.76</td>
<td>5.77</td>
</tr>
<tr>
<td>Solidarity</td>
<td>302</td>
<td>8</td>
<td>37</td>
<td>22.50</td>
<td>5.58</td>
</tr>
</tbody>
</table>

Pearson correlations were also examined for all variables (see Table 4.2).
Table 4.2 *Correlation Matrix for All Variables*

<table>
<thead>
<tr>
<th></th>
<th>TEACHER IMMEDIACY</th>
<th>CARING</th>
<th>STUDENT IMMEDIACY</th>
<th>AFFINITY SEEKING</th>
<th>CONTROL</th>
<th>QUESTION ASKING</th>
<th>STUDENT UNDERSTANDING</th>
<th>MOTIVATION</th>
<th>SOLIDARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEACHER IMMEDIACY</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CARING</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.563**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STUDENT IMMEDIACY</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.511**</td>
<td>.391**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AFFINITY SEEKING</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.485**</td>
<td>.419**</td>
<td>.734**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTROL</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.426**</td>
<td>.439**</td>
<td>.457**</td>
<td>.525**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>QUESTION ASKING</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.289**</td>
<td>.291**</td>
<td>.526**</td>
<td>.441**</td>
<td>.285**</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STUDENT UNDERSTANDING</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.466**</td>
<td>.336**</td>
<td>.245**</td>
<td>.350**</td>
<td>.276**</td>
<td>.271** 1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MOTIVATION</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.464**</td>
<td>.435**</td>
<td>.357**</td>
<td>.412**</td>
<td>.329**</td>
<td>.298** .498** 1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SOLIDARITY</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.415**</td>
<td>.508**</td>
<td>.549**</td>
<td>.651**</td>
<td>.513**</td>
<td>.401** .198** .404** 1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.000</td>
</tr>
</tbody>
</table>
**Hypothesis 1**

The first set of hypotheses predicted that teacher behaviors (teacher immediacy, teacher caring, shared control) and student behaviors (student immediacy and student affinity-seeking strategies) would positively relate to instructional solidarity. Upon examination of all bivariate correlations, all teacher and student variables positively related to instructional solidarity (teacher immediacy ($r = .326, p < .01$); teacher caring ($r = .408, p < .01$); shared control ($r = .538, p < .01$); student immediacy ($r = .549, p < .01$); student affinity-seeking strategies ($r = .651, p < .01$)).

Prior to regression analysis, it is common practice to examine the intercorrelations among all independent variables for multicollinearity issues. According to Meyers, Gamst, and Guarino (2006) multicollinearity exists when bivariate correlations of .90 and higher exist between independent variables (although some may consider bivariate correlations of .80 and higher problematic). The correlation between student immediacy and student affinity-seeking strategies ($r = .734, p < .01$) approached this latter cut-off, and it was decided that one of these two independent variables should be deleted. The decision to discard student immediacy was based on the limited amount of literature surrounding this construct in comparison to the amount of previous research on student affinity-seeking strategies. There is greater theoretical justification for inclusion of student affinity-seeking behaviors. Thus, for purposes of testing hypothesis one through multiple regression analysis, student immediacy was eliminated.

When entered into a multiple regression analysis, teacher caring, shared control, and student affinity-seeking behavior significantly predicted instructional solidarity [$F(4, 279) = 72.346, p<.001; Adjusted $R^2 = .502$]. Teacher caring [$t = 4.768, p < .001; \beta = .253$], shared control [$t = 3.207, p = .001; \beta = .166$], and student affinity seeking [$t = 8.938, p < .001; \beta = .471$] were significant, while teacher immediacy [$t = -.483, p = .630; \beta = -.026$] did not remain in the regression model (see Table 4.3). Therefore, the first hypothesis was partially supported, as illustrated in Figure 4.1.
Table 4.3 *Regression Model of Instructional Solidarity*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant) -1.007</td>
<td>2.145</td>
<td>-.469</td>
<td>.639</td>
</tr>
<tr>
<td></td>
<td>Teacher Immediacy -.025</td>
<td>.052</td>
<td>-.483</td>
<td>.630</td>
</tr>
<tr>
<td></td>
<td>Teacher Caring .417</td>
<td>.087</td>
<td>.253</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Affinity Seeking .530</td>
<td>.059</td>
<td>.471</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Control .169</td>
<td>.053</td>
<td>.166</td>
<td>.001</td>
</tr>
</tbody>
</table>

Dependent Variable: Instructional Solidarity

*Note: Adj. R² = .502*
Because teacher immediacy was non-significant in the previous regression analysis, it was dropped from the first portion of the SUM and instructional solidarity was regressed on shared control, teacher caring, and student affinity-seeking.

In this revised analysis, when entered into a multiple regression analysis, teacher caring, shared control, and student affinity-seeking behavior significantly predicted instructional solidarity \[ F (3, 280) = 96.648, p < .001; Adjusted R^2 = .503 \]. Teacher caring \[ t = 5.208, p < .001; \beta = .242 \], shared control \[ t = 3.176, p = .002; \beta = .163 \], and student affinity seeking \[ t = 9.144, p < .001; \beta = .464 \] were significant. The results of this analysis are provided in Table 4.4 and a graphical representation is available in Figure 4.2.
Table 4.4 *Regression Model of Instructional Solidarity (Excluding Teacher Immediacy)*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>-1.728</td>
<td>1.537</td>
<td>-1.125</td>
<td>.262</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.176</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.028</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9.144</td>
<td>.000</td>
</tr>
</tbody>
</table>

Dependent Variable: Instructional Solidarity

*Note: Adj. R² = .503*

Figure 4.2 *Graphical Representation of Instructional Solidarity Regression Model (Excluding Teacher Immediacy)*
Hypothesis 2

Hypothesis two tested the relationship between student perceptions of instructional solidarity and student content-related question-asking. It was predicted that student perceptions of instructional solidarity would positively relate to student content-related question-asking. This hypothesis was supported. There was a moderately strong positive relationship between student perceptions of instructional solidarity and question-asking \( r = .401, p < .001 \). In addition, when regression analysis was employed, the predictor variable instructional solidarity accounted for 15.8% of the variance in student content-related question-asking \( F (1, 662.03) = 54.118, p<.001; Adjusted R^2 = .158 \). Descriptive statistics for this regression model are given in Table 4.5.

Table 4.5 Regression Model for Student Content-Related Question-Asking

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>14.124</td>
<td>.859</td>
<td>16.450</td>
<td>.000</td>
</tr>
<tr>
<td>Solidarity</td>
<td>.276</td>
<td>.038</td>
<td>.401</td>
<td>.000</td>
</tr>
</tbody>
</table>

Dependent Variable: Question Asking
Note: *Adj. R^2 = .158

Hypothesis 3

Hypothesis three predicted that student perceptions of instructional solidarity would positively relate to student motivation. This hypothesis was also supported. Results indicate there was a moderately strong positive relationship between student perceptions of instructional solidarity and student motivation \( r = .404, p < .001 \). As with hypothesis 2, regression analysis was employed and the predictor variable instructional solidarity accounted for a significant proportion of variance in student motivation \( F (1, 1538.69) = 55.033, p<.001; Adjusted R^2 = .16 \). In Table 4.6, the descriptive statistics for this regression model are provided.
Table 4.6 Regression Model for Student Motivation

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>23.754</td>
<td>1.298</td>
<td>18.299</td>
<td>.000</td>
</tr>
<tr>
<td>Solidarity</td>
<td>.421</td>
<td>.057</td>
<td>.404</td>
<td>7.418</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Motivation
Note: Adj. $R^2 = .16$

Hypothesis 4

The final hypothesis tested the heart of the Student Understanding Model that attempted to determine the effects of instructional solidarity on student understanding. It was hypothesized that controlling for the effects of each other, instructional solidarity, student content-related question-asking, and student motivation would each be positively related to student understanding. This hypothesis was partially supported. Student content-related question-asking and student motivation significantly accounted for approximately 26% of the variance in student understanding [$F (3, 280) = 33.920$, $p < .001$; Adjusted $R^2 = .259$]. Student content-related question-asking [$t = 2.678$, $p = .008$; $\beta = .152$] and student motivation [$t = 8.368$, $p < .001$; $\beta = .475$] both positively predicted student understanding (see Table 4.7). However, instructional solidarity [$t = -.923$, $p = .357$; $\beta = -.055$] did not significantly predict student understanding directly. However, positive indirect effects of instructional solidarity on student understanding can be inferred from the positive influences of instructional solidarity on student question asking.
Table 4.7 Regression Model for Student Understanding

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant) 17.154</td>
<td>1.837</td>
<td>9.336</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Solidarity -.051</td>
<td>.055</td>
<td>-.055</td>
<td>-.923</td>
</tr>
<tr>
<td></td>
<td>Question Asking .205</td>
<td>.077</td>
<td>.152</td>
<td>2.678</td>
</tr>
<tr>
<td></td>
<td>Motivation .424</td>
<td>.051</td>
<td>.475</td>
<td>8.368</td>
</tr>
</tbody>
</table>

Dependant Variable: Student Understanding
Note: Adj. $R^2 = .259$

and student motivation discussed under hypotheses two and three. Therefore, results indicated that the relationship between instructional solidarity and student understanding was mediated through student content-related question-asking and student motivation. In Table 4.7, the descriptive statistics for this regression model are provided.

Results from the system of simultaneous regression equations testing the Student Understanding Model are summarized in Figure 4.3.
Figure 4.3 Graphical Representation of the Student Understanding Model

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Chapter Five: Discussion

The body of instructional communication literature has grown tremendously over the past several decades; however, a recurring criticism is a lack of clarity regarding how teacher-student relationships impact student understanding. This is due, in large part, to the attempts to simplify the complex instructional process. Problems also exist in the conceptualization and operationalization of student learning outcomes. The goal of the present dissertation was to investigate the impact of student perceptions of interpersonal teacher-student relationships on student understanding. A secondary goal of the current research was to provide clarity to the existing corpus of research on student learning outcomes.

This dissertation, then, makes a significant contribution to the instructional communication literature insomuch as it presents and tests a causal process model of student understanding and helps to untangle the complex instruction process to determine what, if any, role instructional solidarity plays in the process of student understanding. Most importantly, this study provides empirical evidence explaining the link between student perceptions of teacher-student relationships and student understanding. In this final chapter, an interpretation and analysis of the findings are presented. In addition, limitations of the present study and directions for future research are discussed.

Interpretation and Analysis of Results

In this study, the Student Understanding Model (SUM) was presented and tested based on four hypotheses created to investigate the impact of teacher and student behaviors on instructional solidarity, as well as the relationship between instructional solidarity and student understanding as mediated by student content-related question-asking and student motivation. In this final chapter each of the hypotheses will be addressed in relation to the overall SUM. Moreover, implications of the results, both theoretical and pragmatic, will be addressed with respect to the causal process model tested.

Hypothesis One

The Student Understanding Model is a relational model of instructional communication. In order to test the model, it was prudent to determine which teacher
and student behaviors best predict the perception of instructional solidarity. In the first hypothesis it was found that only, teacher caring, shared control, and student affinity-seeking strategies positively related to student perceptions of instructional solidarity. What is notable is that two teacher behaviors and one student behavior were able to account for over 50% of the variance in perceptions of instructional solidarity. Because both the independent and dependent variables in this analysis are considered relational constructs, this finding is not surprising. What is surprising, however, is that when regressed on instructional solidarity, teacher immediacy was not a significant predictor.

Past research consistently demonstrates that teacher immediacy behaviors (Dobransky & Frymier, 2004; Frymier & Houser, 2000) positively impact student satisfaction with the teacher and the course. The data in the current study suggest that although teacher immediacy behaviors may correlate with variables such as student satisfaction, they may not lead to student perceptions of instructional solidarity. The results do not allow for a complete explanation of why teacher immediacy did not statistically contribute to student perceptions of instructional solidarity, several causes may be speculated.

One explanation is that past instructional communication researchers have focused solely on either teacher behaviors or student behaviors, while the current study included both in the same analysis as reported from perspective of the student. Another explanation is that previous immediacy research relied on simple correlations, whereas the current research employs regression analysis to examine the predictive value of the teacher and student variables included on student perceptions of instructional solidarity.

Additionally, it is possible that when a teacher who is naturally immediate interacts with students, s/he is not more or less immediate to individual students, but acts in a consistent manner with the entire class. With the exception of one item on the teacher immediacy measure used in this study (“Gets into conversations with individual students before or after class”), every other item refers to immediacy behaviors a teacher may engage in directed toward multiple members of the class simultaneously, or the class as a whole. Further, the item that does imply individual attention given to students could be interpreted as a student observing a teacher engaging in individual conversations before and after class without himself/herself being one of those students. As argued by
Dobransky and Frymier (2004), it may be that the perception of a relationship is developed in out-of-class communication, including interaction that occurs one-on-one between teacher and student before and after class. If teacher immediacy behaviors are limited to in-class interactions, these behaviors may not positively impact perceptions of instructional solidarity. Therefore, it may be speculated that while traditional teacher immediacy behaviors such as smiling, making eye contact, and using inclusive language in the classroom may positively influence student attention and processing, they do not influence perceptions of instructional solidarity.

Also notable is that in the first analysis teacher caring remained in the model while teacher immediacy behaviors did not. When referring to the five items included on the teacher caring measure used in this study, three out of the five are “me” statements. In other words, while two items are more general – “Is insensitive,” “Is understanding,” the first three items state: “Cares about me,” “Has my best interest at heart,” and “Is unconcerned with me.” When comparing the wording of items on the teacher immediacy measure and the teacher caring measure, it seems plausible, as operationalized, that student perceptions of teacher caring are more personally based and, thus, lead to perceptions of the development of a relationship. Conversely, students perceive teachers to be immediate (or not immediate) with the group as a collective, and little meaning is assigned on an individual basis.

While teacher immediacy behaviors failed to be statistically significant predictors of instructional solidarity, teacher caring, shared control, and student affinity-seeking strategies did account for a large proportion of the variance in student perceptions of instructional solidarity. This finding is important for several reasons. Frymier and Houser (2000) argued that communication that occurs between teachers and students is not only content-driven, but relational as well. Specifically, they argue that perceptions of a positive teacher-student relationship will allow students to more freely approach the teacher and increase interaction. Theoretically, the results of this study support previous research that makes claims about the importance of relational messages in the development of teacher-student relationships.

Unfortunately, in their work, Frymier and Houser (2000) fail to specifically provide evidence of what relational behaviors facilitate the development of teacher-
student relationships. The current study adds insight to previous research by providing evidence of three relational constructs that significantly predict student perceptions of teacher-student relationships. Pragmatically, if educators want to engage in a relationship with (or create the perception thereof) students, presenting course content and communicating in a caring manner and relinquishing some degree of control to students will positively impact relational development.

One of the significant predictors of instructional solidarity in the current study is shared control ($t = 3.107, p = .002; \beta = .161$). This construct is important, as it represents an idea that may seem unconventional to most instructors. There is a clear hierarchy between teacher and student, and theoretically the teacher holds most of the control. Shared control implies that it is up to the teacher to relinquish some of that control to the student. This may include allowing students to share in the responsibility of choosing assignments and contributing to class decisions. While shared control is important to the development of student perceptions of instructional solidarity, perhaps of greater importance is the role of student behaviors, such as affinity-seeking, in the process of relational development.

In the current study student affinity-seeking strategies significantly predict perceptions of instructional solidarity ($t = 3.176, p = .002; \beta = .464$). As operationalized in this dissertation, student affinity-seeking strategies include behaviors such as volunteering to help the teacher, laughing at the teacher’s jokes, and being friendly to the teacher. These same items mirror actions often present in other types of interpersonal relationships such as friendships and romantic relationships (Frymier & Houser, 2000; Rawlins, 2000); thus, it is not unexpected that they also predict perceptions of solidarity. What warrants analysis, however, is the question of why students would engage in such behaviors? As indicated in the name of the construct, students engage in such behaviors to gain a teacher’s affinity. Perhaps they do so to try to develop some type of relationship with the teacher in order to facilitate learning. It is possible that they consciously want the teacher to not only like, them but to perceive a relationship with them. It is notable that out of the three significant predictors of instructional solidarity, student affinity-seeking strategies predicted the greatest amount of variance. Therefore, while teacher behaviors do contribute to student perceptions of instructional solidarity, it is the student
behaviors that most impact the relational perceptions. From this, there are pragmatic implications.

From a teacher’s perspective, engaging in caring behaviors and sharing control with students will facilitate the development of student perceptions of instructional solidarity. Students, however, enact behaviors that impact perceptions of instructional solidarity, and based on the data in the current study, student behaviors account for the majority of that impact. In other words, while the teacher-student relationship is a shared construct, it is important that the student enact behaviors that initiate such a relationship. The data suggest that if a student desires instructional solidarity with the teacher, they will engage in behaviors (perhaps unconsciously) to facilitate such relational development. Therefore, because the burden of relational development rests with the students, and not with the teacher, the teacher is able to focus on other important instructional communication messages such as clarity and content relevance, while allowing the student to initiate appropriate instructional solidarity.

Overall results of the first hypothesis suggest that while teacher caring, shared control, and student affinity-seeking strategies significantly predict student perceptions of instructional solidarity, teacher immediacy behaviors do not. Because teacher immediacy behaviors and instructional solidarity are both relational variables, one may speculate that multicollinearity between the variables exists, indicating the variables are measuring the same thing. Referring to the correlation matrix provided at the beginning of this chapter, the correlation between teacher immediacy behaviors and instructional solidarity is .415 ($p < .001$). Because the relationship must be .80 or greater for multicollinearity to be an issue (Meyers et al., 2006), it appears that it is not a contributing factor to these results. Though the exclusion of teacher immediacy behaviors in the first regression model is unexpected, these results are not without importance.

The first hypothesis provides a significant contribution to instructional communication research. First and foremost, findings provide empirical evidence that there are behaviors teachers and students can engage in which aid in the development of student perceptions of instructional solidarity. Several researchers have attempted to conceptually define the teacher-student relationship (Frymier & Houser, 2000; Rawlins, 2000; Sprague, 1993), but have provided no evidence of which teacher and student
behaviors facilitate such a relationship. This dissertation includes the first documented evidence of behaviors that directly impact student perceptions of instructional solidarity. Moreover, it appears that student behaviors account for the greatest amount of variance in perceptions of instructional solidarity. Therefore, pragmatically, one may speculate that if students want to develop a teacher-student relationship, they will engage in behaviors to facilitate it.

Next, the current study suggests that while teacher immediacy has been a large focus in past research (see Witt et al., 2003), it should not be the only relational instructional communication construct we focus on in our work. According to Witt and his colleagues, the teacher immediacy construct continues to be widely researched within the discipline, yet does little to explain the variance in outcomes other than student satisfaction. Based on the results of this hypothesis alone, it may be deduced that teacher immediacy behaviors are not as important as we once believed. This is not to say that teacher immediacy is not important at all, nor that it does not have a positive impact within the classroom (such as gaining student attention), but rather the extent research on this topic may be preventing instructional researchers from investigation of other variables within theoretical models that may contribute more to the body of literature surrounding teacher-student relationships and how they may be related to student learning outcomes. For example, teacher caring is also an important relational variable in the classroom context (in terms of student satisfaction and creating a comforting learning environment) (Teven, 2007), and appears to be an important predictor of student perceptions of instructional solidarity.

As addressed in the first chapter of this document, Watzlawick, Beavin, and Jackson (1967) argued there are two dimensions of communication: content and relational. More recently, Kerssen-Greip, Trees, and Hess (2008) argued that instructional facework positively impacts learning relationships and environments--though a thorough explanation of how these behaviors impact instructional solidarity were not presented. Until the present study, the role of the relational dimension of communication within the instructional context had been largely ignored in terms of relational development (Nussbaum & Scott, 1980). We now have support that at least two teacher behaviors and one student behavior can significantly account for over half of
the variance in perceptions of instructional solidarity. Further, results of hypothesis one suggest that when interacting with students, instructors must not discount relational messages (such as teacher caring and affinity-seeking) in lieu of a sole focus on content-related messages (such as clarity and content relevance) when attempting to influence the teacher-student dynamic.

In summary, accounting for over half the variance in instructional solidarity is an admirable first step, but the primary goal of this dissertation was to investigate how student perceptions of instructional solidarity impact student understanding. Because past research indicates there is only a small link between relational constructs and student cognitive learning (Witt et al., 2003), it was proposed that one or more mediating variables could more effectively link instructional solidarity to student understanding. **Hypotheses Two and Three**

Hypotheses two and three provide tests of the link between student perceptions of instructional solidarity and student content-related question-asking and student motivation. Both hypotheses were supported in this dissertation. Results indicate that student perceptions of instructional solidarity positively influence student outcome variables, which supports the argument that the relational dimension of communication has a positive impact within the instructional setting. A closer examination of the results of hypotheses two and three are provided in the following sections. In the current study, one of the “links” examined was student content-related question-asking, which was found to be significantly related to perceptions of instructional solidarity.

**Student Content-Related Question-Asking**

There is a moderate positive relationship between student perceptions of instructional solidarity and student content-related question-asking ($r = .401, p < .001$). Particularly, almost 16% of the variance in student content-related question-asking was predicted from instructional solidarity. The contribution of this result is the provision of empirical evidence supporting the impact of student perceptions of instructional solidarity on student tendencies to engage in behaviors that may increase their engagement with course content, such as question-asking. Based on these results, when students perceive a relationship with their teacher, it is possible they may feel more comfortable asking questions regarding course content. As previously cited, student question-asking is
important when viewed as one form of interaction involvement in the classroom because student interaction involvement positively correlates with reports of learning (Frymier, 2005). Thus, when conceptualized as one possible link between student perceptions of instructional solidarity and student understanding, increasing student interaction through question-asking is important.

According to Teven (2007), effective teaching includes creating a warm, supportive, and caring environment for students which positively impacts student satisfaction. In addition, Sprague (1993) argued that because teaching may be defined as “assisting learning,” teacher-student relationships should be defined as one type of caring relationship. It is likely when students perceive an interpersonal relationship with the teacher; they feel they are part of a supportive environment (though the current study did not measure support directly) where they may ask questions regarding course content without being patronized or feeling inferior. This is especially poignant considering the nature of the items used to measure question-asking in the current study. For instance, “I ask a lot of questions in class,” “I feel comfortable asking the teacher to provide examples,” and “I often ask questions to clarify assignment guidelines” relate to extent to which students feel comfortable engaging in question-asking behavior. As hypothesized, it seems logical that the more students perceive instructional solidarity, the more questions they will ask. Therefore, because there is evidence that student perceptions of instructional solidarity positively influence student content-related question-asking, pragmatic implications surface.

From a teacher’s perspective, there is little more disconcerting than lecturing to a class of blank faces with no feedback. Often, instructors actively look for verbal and nonverbal feedback from students indicating they understand what is being communicated. When teachers truly care about student understanding, they are happy to field questions regarding the content covered in class. Too many student questions go un-asked in the classroom context for reasons including fear of feeling dumb or intimidated. Because it is the student fears teachers are trying to alleviate, it is ultimately the teacher’s responsibility to create an environment in which the student is likely to engage in question-asking. Thus, results indicate building instructional solidarity is one way to increase student content-related question-asking.
Therefore, in tandem with the results from the first hypothesis, it appears that when teachers behave in such a way that leads to the development of student perceptions of instructional solidarity student engagement in the learning process is also increased. The results of hypothesis two support the claim that perceptions of solidarity will positively impact student engagement behaviors, such as student question-asking. In addition, results of the third hypothesis in the current study suggest that perceptions of instructional solidarity also positively impact reports of student motivation.

**Student Motivation**

Similar to the results for the impact on student content-related question-asking, there is a moderate positive relationship between student perceptions of instructional solidarity and student motivation ($r = .404, p < .001$), with 16% of the variance in student motivation predicted from student perceptions of instructional solidarity. As previously stated in this document, past research indicates that certain teacher behaviors have been shown to positively impact student motivation (Frymier, 1994a; Frymier & Shulman, 1996; Richmond, 1990). There is no documentation, however, of how student perceptions of a teacher-student relationship (as opposed to individual teacher behaviors) contribute to the variance in student motivation. Although it may be inferred from past research that a positive teacher-student relationship positively impacts student state motivation, this dissertation provides the first documented empirical support of such statistical significance.

Motivation, generally, and student motivation to succeed academically in particular, is clearly may be influenced from both intrinsic and extrinsic sources. Even in the absence of published research, it is common knowledge that students are intrinsically motivated to do well due to a drive to succeed, pressure from parents, and the desire to graduate from college. The focus of the current research study is not to determine all of the influences on student motivation, but to investigate the impact of the perception of instructional solidarity on student state motivation. Past research supports the claim that teacher behaviors (instructional facework) positively impacts student motivation (Kerssen-Griep, Hess, & Trees, 2003). The current study confirms the relational impact of teacher behaviors on student motivation. Moreover, considering all of the factors in one’s life that may motivate him/her to do well, it seems that if student perceptions of
instructional solidarity can predict 16% of the variance in student motivation, this relationship is significant.

One interpretation of these results is that when a student perceives an interpersonal relationship with his/her teacher, s/he is more motivated to do well in the course and not disappoint the teacher. People are emotional beings, and often pride is a strong motivator to be successful. It is likely that students want their teacher to be proud of them; thus, they are motivated to perform well in class. According to de Rivera and Grinkis (1986) most of the time human emotion emerges from interaction, and the meaning of emotions are found within social and personal relationships. Although student emotional outcomes of perceptions of instructional solidarity were not included in the current study, it seems plausible for one explanation of how perceptions of a teacher-student relationship impact student motivation. Results indicating a positive correlation between instructional solidarity and student motivation provide support that the relational dimension of instructional communication matters and provides a warrant for this study.

The relationship between student perceptions of instructional solidarity and both student content-related question-asking and student motivation are significant and positive. In comparison, perceptions of instructional solidarity account for approximately the same amount of variance (16%) in both question-asking and motivation. This is consistent with the correlational analysis that indicates the relationship between instructional solidarity and question-asking \( (r = .401, p < .001) \) and instructional solidarity and motivation \( (r = .404, p < .001) \) are similar. While there is some relationship between student content-related question-asking and motivation \( (r = .298, p < .001) \), as operationalized in this study, the two variables are qualitatively different, and are not predictive of one another in the causal process model presented in this dissertation. When comparing hypotheses two and three, the unchanging variable is instructional solidarity. This may indicate that while there may be inconsistencies in the teacher and student behaviors that facilitate the development of student perceptions of instructional solidarity (as indicated in the results of the first hypothesis), the impact of instructional solidarity on student engagement behaviors is relatively stable. The Student Understanding Model was developed for a specific purpose and represents a complex instructional communication system. The explanatory power of the model may be
increased with the addition of other student engagement constructs, but it is apparent that student perceptions of instructional solidarity provide a catalyst for student engagement behaviors.

To summarize, perceptions of instructional solidarity predict variance in both student content-related question-asking and student motivation and demonstrate one of the potential advantages for instructional researchers to focus on relational aspects of the classroom. With regard to the first hypothesis, it seems logical that a significant proportion of the variance in the dependent variable would be accounted for since relational communication messages are regressed onto another inherently relational variable—a perception of a teacher-student relationship. The amount of variance accounted for in the next two hypotheses is significantly lower; however, there is less conceptual overlap between the relational variable instructional solidarity and student engagement behaviors. Interpretation of the statistical and pragmatic results of the first three hypotheses make it possible to turn our attention to the primary purpose of this dissertation—an examination of the link between perceptions of instructional solidarity and student understanding. The results of the final hypothesis demonstrate a causal relationship between instructional solidarity and student understanding that is mediated through student content-related question-asking and student motivation.

Hypothesis Four

The final hypothesis tested the heart of the Student Understanding Model that attempted to determine the predictive effects of instructional solidarity on student understanding. It was hypothesized that controlling for the effects of each other, instructional solidarity, student content-related question-asking, and student motivation will be positively related to student understanding. This hypothesis was supported.

The correlation between instructional solidarity and student understanding, although positive, is remarkably small \((r = .198, p = .001)\). Further, when instructional solidarity is regressed onto student understanding, the construct predicts less than 4% of the variance in student understanding. To some scholars, such a small correlation may indicate that the teacher-student relationship is not important and fails to predict student understanding. When the relationship is mediated through other constructs, however, the
indirect relationship between instructional solidarity and student understanding provides much insight on the impact of the relational dimension of instructional communication.

As stated previously in this document, instructional solidarity positively relates to both student content-related question-asking and student motivation. In turn, student content-related question-asking and student motivation positively relate to student understanding. Moreover, question-asking and student motivation account for approximately 26% of the variance in student understanding. Therefore, when the relationship between instructional solidarity and student understanding is mediated through student content-related question-asking and student motivation, the impact of instructional solidarity becomes socially and statistically significant.

Sprague (1993) makes the claim that the nature of the teacher-student relationship is unclear in relation to other types of human relationships. Additionally, while several scholars (Dobransky & Frymier, 2004; Frymier & Houser, 2000; Rawlins, 2000) have argued that the teacher-student relationship positively impacts student understanding, no empirical evidence of such a link has been provided. The current study presents an explanation of how instructional solidarity is indirectly (rather than directly) related to student understanding.

The SUM presents student content-related question-asking and student motivation as mediator variables that serve to clarify the nature of the relationship between instructional solidarity and student understanding. Thus, based on the results of this study, several implications surface.

First, results of the current study support past claims that student engagement behaviors positively influence student understanding (Henning, 2007). In other words, the more students are motivated to achieve and the more they engage in question-asking, the greater their understanding. While the results of the current dissertation do not indicate which additional constructs to add to the SUM, it is likely that student individual difference variables, such as IQ and/or cognitive complexity, may increase to predictive power of the model. Results do provide evidence that student question-asking and student motivation play an integral role, predicting 26% of the variance in student understanding. Pedagogically, then, teachers must continue to engage in behaviors that support student engagement and motivation in order to positively impact student understanding.
understanding. Pintrich (1991) showed that students’ motivational beliefs positively impact student learning behaviors. The current study supports past research and the implications that surfaced.

Next, while teachers impact student understanding indirectly, students must share responsibility in their own level of understanding. As indicated in the results from the first hypothesis in this dissertation, both teacher and student variables impact student perceptions of instructional solidarity. In other words, both student and teacher behaviors are important in relational development, and teacher behaviors alone do not account for the same amount of shared variance. Likewise, teacher behaviors do not seem to directly influence student understanding, indicating students share in their own learning. The Student Understanding Model, as hypothesized, is supported in this study. Student perceptions of instructional solidarity are positively related to student content-related question-asking and student motivation. In turn, student content-related question-asking and student motivation positively relate to student understanding.

Collectively, teacher caring, student affinity-seeking behaviors, instructional solidarity, student content-related question-asking, and student motivation significantly predicted approximately 26% of the variance in student understanding. Because student understanding is the main focus of this dissertation, it seems logical to analyze the items included on the measure that was created specifically for this study. Each item was intended to measure one aspect of student understanding that would indicate learning has taken place. For instance, “I understand examples the teacher uses in class,” “I understand how to apply concepts learned in class,” and “I can see connections between course concepts and situations in my life” do not simply refer to rote learning, but indicate higher levels of learning according to Bloom’s (1956) Taxonomy. In terms of content validity, the student understanding measure appears to capture what it was intended to capture. In addition, reliability analysis indicates it to be a reliable measure of self-reported student understanding. It is useful, therefore, to examine its relationship to other variables included in the model.

From the perspective of simple bivariate correlations, student motivation was most highly correlated \( r = .498 \) \( p < .001 \) with student understanding, followed by teacher immediacy \( r = .466, p < .001 \). The correlations between student understanding
and every other variable included in the Student Understanding Model are consistently under .40 indicating a small or moderately small relationship. One possible explanation is that student state motivation is truly an important predictor of student understanding and is positively affected by the perception of a teacher-student relationship. Moreover, it may be concluded that relational communication messages including immediacy and affinity-seeking do contribute to the statistical explanation of student understanding, but motivation is consistently the strongest predictor of student understanding within the SUM. From a communication perspective, however, the SUM does not relegate the teacher to cheerleader where their sole responsibility is to motivate students. Rather, the model demonstrates that instructional solidarity (as the result of classroom communication) influences student behaviors that, in turn, facilitate (and predict) student understanding.

Pragmatically, instructors must continue to engage in behaviors that positively impact instructional solidarity, which, in turn, positively impacts student motivation which may be the most significant catalyst for increasing student understanding. Previous research has shown a positive relationship between student motivation and student learning outcomes (Frymier, 1994b) and the current study reinforces that relationship.

In addition to substantive implications already addressed, the indirect relationship between perceptions of instructional solidarity and student understanding provides pragmatic implications for the classroom context. Though it is advantageous for instructors to engage in behaviors that aid in the development of a warm and supportive environment for students, teachers must also be aware of the type of relationship that develops with students. The results of hypothesis one support the claim that teacher and student behaviors positively influence teacher-student relational development, which is complemented by the results of hypotheses two and three. These results are exciting because the test of the SUM not only accounts for over half of the variance in instructional solidarity, but it also demonstrates the mediational effects of the teacher-student relationship to impact student understanding.

Finally, it may be concluded from the results of this study that student perceptions of instructional solidarity do not directly impact student reports of understanding as
implied in past research, but rather, that the relationship is mediated by student engagement variables such as student content-related question-asking and student motivation. It is premature to draw specific conclusions on the results of a single study, however, it is critical that instructors recognize the importance of the relational dimension of instructional communication within the classroom context.

**Limitations**

Although this research study provides significant insights for teacher-student relationships and student understanding, it is not without limitations. One limitation includes the subject pool. For practical purposes, the study sample was selected from only one university, and, therefore, may reflect the cultural identity of the University of Kentucky. Additionally, both the sample used and the target teachers are relatively homogenous in terms of age, ethnicity, and socioeconomic status. Moreover, all instructors were Communication instructors teaching Interpersonal Communication courses, thus limiting the external validity of this study. It is possible that because all the instructors reported on were trained within the Communication discipline, they may share similar teaching styles, and use similar messages in their communication with students. Conversely, when reporting on instructors from a variety of disciplines, there is greater opportunity for the communication styles within the classroom context to vary and provide a more representative set of responses. Thus, the more diverse the disciplines from which the instructors are selected the more potentially generalizable the results.

External validity is limited in the current study because only Communication instructors were chosen for the sample. Recall, however, that the sample was originally selected because a measure of student knowledge acquisition was originally included in the SUM to measure student understanding of specific course content in lower level Interpersonal Communication courses. In order to measure actual knowledge acquisition, it was necessary to test all students on the same content.

Following the creation of this measure, however, several issues arose that justified exclusion of this construct from this study. First, there is no evidence that every COM 252 (Interpersonal Communication) instructor actually covered the material the knowledge acquisition measure attempted to encapsulate. Therefore, it could not be
concluded that more or less knowledge on the given topic was acquired from time one to time two in the data collection process. Next, results from the pilot study (described in chapter three) indicated that there was extreme variation in the time taken to complete the measure, ranging from less than one minute to nearly 15 minutes. Therefore, results from this measure were highly skewed. Finally, because of the nature of on-line data collection, it is possible that students could complete the survey with the aid of notes/textbook and, again, skew the results of the study. Consequently, the learning process outcome measure in this dissertation was limited to student understanding, to the exclusion of student knowledge acquisition. The sample, however, remained the same and the data analyzed was based on student perceptions of only Communication instructors.

An additional limitation of this study includes the cross-sectional design. Relationships are generally developed over time, and student-teacher relationships often are limited in duration. Data collection at more than one point in time may have allowed for a more accurate understanding of how the teacher behaviors impact student perceptions of instructional solidarity.

Next, the causal process model put forth in the current study did not attempt to account for and/or control for individual teacher or student differences (e.g., IQ, attitude, neuroticism). Given the results of this study, one may question the possibility that individual differences could impact the results. For instance, student perceptions of instructional solidarity may differ based on what one’s culture accepts as an appropriate teacher-student relationship. If cultural expectations include a strict hierarchy between teacher and student, it is unlike they would engage in any behaviors (such as affinity-seeking behaviors) which may lead to perceptions of instructional solidarity. Past research, however, has established no theoretical basis to include such information in the analysis of the theoretical model.

In social scientific research it is common practice to collect demographic information from respondents. Within the body of instructional communication research this is no different; however, little research has provided support of effects based on gender, age, gender, or other demographic information. In 2006, Glascock and Ruggiero examined the extent that sex and ethnicity impact student perceptions of teacher
credibility. Results indicated that teacher variables such as immediacy and expertise significantly predicted student reports of learning, but sex and ethnicity had no effect.

In addition to a lack of theoretical justification to include demographic information in the analysis, there exists a technical explanation for the exclusion of demographic variables in the test of the Student Understanding Model. Particularly, the units of analysis in the Student Understanding model are statistical units, or units which are a “property of a thing that summarizes the distribution of that property in the thing” (Dubin, 1978, p. 64). As in much social scientific research, in terms of theory building statistical units are very convenient to employ, thus the conscious decision was to include only statistical units (as opposed to enumerative, relational, associative, or summative units). Further, Dubin states that when statistical units are used in theory-building, they are defined as property of the collective. Therefore, in the same theory statistical units should not be combined with any other kind of unit which “describes a property of members of the same collective” (p. 74). Hence, although demographic information was collected, no demographics were included in the Student Understanding Model, and thus, were not included in the analysis.

Finally, a significant limitation of the current study is the use of student reports of understanding as opposed to measuring actual knowledge acquisition. As previously mentioned, it was the original intent to measure knowledge acquisition of specific course content, but unfortunately inconsistency in the results mandated exclusion of said measure from the analysis. It is possible that students reported more or less understanding based on a number of factors including current mood or an attempt to respond to items “correctly.” This, of course, continues to be an issue related to the cognitive learning dilemma addressed earlier in this document, and is a notable limitation of the current dissertation.

Interestingly, the current study provides perplexing results about the mediated impact of student perceptions of instructional solidarity on student understanding, and thus raises questions to be addressed in future research. Therefore, in addition to the advancement of a relational causal process theoretical model of student understanding, the current study is rich in heuristic value and provides several avenues for instructional communication research.
Directions for Future Research

As a result of this dissertation, many opportunities for instructional communication may be proposed. To begin, there are future directions related to the theoretical implications of this study. First and foremost, it is well known that no study by itself can be used to make definitive conclusions. Therefore, future research should begin with a replication of the current study. Further tests of the Student Understanding Model using different sampling procedures and a slightly more diverse sample could be advantageous. Because theories should be generalizable—at least within certain boundary conditions, data collection procedures that include instructors from disciplines other than Communication are warranted.

Common to all good theory-building research, the next step in the process is reconceptualization. The current dissertation provides empirical support that various relational instructional communication variables significantly contribute to student understanding. The Student Understanding Model, however, in its current form, requires revision. Perhaps there are other relational instructional constructs that may be used to better theoretically explain student understanding. For instance, teacher and/or student socio-communicative style or teacher affinity-seeking strategies may provide additional variance in the explanation of student understanding. In addition, there may be different mediating variables linking perceptions of instructional solidarity and student understanding than the ones included in this study. In other words, there may be additional and/or different student engagement variables that mediate the relationship between perceptions of instructional solidarity and student understanding (e.g., listening, note-taking). For instance, it is possible that if a student perceives instructional solidarity with his/her teacher, he/she may be more likely to listen during class lectures. Based on the perceived relationship, one may feel obligated to listen out of respect for the teacher. It is well-known that listening is important in regard to retaining information, so listening should positively relate to student understanding.

Next, if our goal as instructional communication scholars is to move away from variable-analytic research, it is time we concentrate on solid theory-building. As Berger (1991) argues, it is time we stop borrowing from other disciplines and stand out among the rest. Perhaps Sprague says it best when she states, “I am convinced that there is a
distinctive form of pedagogical or instructional communication that needs to be studied in its own right” (1993, p. 355). The Student Understanding Model is focused primarily on relational instructional variables that impact student understanding, albeit indirectly. The content dimension, however, is equally important. Past research has documented content-level instructional communication messages that impact student learning outcomes such as teacher clarity (Simonds, 1997a) and content relevance (Frymier & Shulman, 1996). Nevertheless, the work on content-level messages is also atheoretical and we are still unable to successfully explain how communication facilitates student learning. Thus, future research should combine the content-level and relational components of instructional communication research to ideally build a more holistic causal process model of student understanding.

In addition, future directions should address some pragmatic implications of the current dissertation. As indicated by the results for the test of the Student Understanding Model (SUM), future research must continue to address why and how student perceptions of instructional solidarity are related to student understanding. If a student perceives a friendship-type relationship with his/her teacher, s/he may feel they won’t be punished by his/her “friend” for missing class, not completing assignments, and engagement in other behaviors that presumably negatively impact student understanding.

Additionally, it is possible such a perception of a “friendship-like” relationship may be a result of the sample utilized in this study, however, both the idea that students sometimes perceive the teacher-student relationship as a friendship and the idea that this is impacted by the instructors reported on are based solely on speculation, and there is no conclusive evidence that this is, in fact, the case.

Rawlins (2000) suggested that teaching should be examined as a mode of friendship and made the argument that the teacher-student relationship can be difficult to manage. While critics may disagree with this assessment, Rawlins is accurate in his discussion of teacher-student relationships as complex systems of communication. Pragmatically, when teachers and students engage in behaviors that lead to student perceptions of instructional solidarity that are inappropriate, it is difficult to highlight the hierarchy and students could potentially take advantage of the relationship. Therefore, future research should address the question: What is an appropriate interpersonal
relationship between teacher and student? If students perceive their instructors as friends, the hierarchical lines may become blurred, resulting in an adverse effect on student understanding. To better address this question, qualitative research (e.g., focus groups, interviews) could be used.

Finally, it is challenging to fully investigate any relationship when only examining one participant in the relationship. Because teacher-student relationships, as with any other type of relationship, are transactional in nature, future research should investigate both student and teacher perceptions when looking at why and how a sense of instructional solidarity develops. Triangulation is a practice that is time-consuming but often helpful when trying to gauge people’s behaviors and/or attitudes. In research studies focused on a topic such as relationships, responses to questions are not always black and white, though close-ended quantitative surveys only allow for these types of responses. Perhaps instructional communication scholars interested in learning more about teacher-student relationships should consider employing both qualitative and quantitative methods in an attempt to gain a more full understanding of the relationship that occurs in the academic setting.

The present dissertation helps to clarify the extant instructional communication literature surrounding relational messages in the classroom setting, and tests a causal process model to determine how student perceptions of instructional solidarity affect student understanding. Further, this dissertation presents empirical evidence that links relational instructional communication messages to student understanding that is absent in previous research.

Conclusions

The results of the test of the Student Understanding Model (SUM) provide numerous conclusions. First, we continue to validate the positive effects of certain teacher communicative behaviors (e.g., affinity-seeking, caring) on outcomes such as instructional solidarity, student question-asking and student motivation. This dissertation provides empirical evidence of relational instructional communication variables that impact student understanding.

Based on the test of the Student Understanding Model, it may be concluded that teacher caring, student affinity-seeking, student content-related question-asking, and
student motivation positively impact student understanding. Moreover, the variables in this model accounted for approximately 26% of the variance in student understanding. This is significantly more variance accounted for than what has been shown in previous instructional research (Witt et al., 2003). Therefore, based on the relatively small impact of relational communication variables on student learning outcomes, the ability of SUM to predict 26% of the variance in student understanding is a noteworthy conclusion.

In addition to the predictive power of the Student Understanding Model, the development of a theoretical model of instructional communication is a major contribution to the literature. One of the major criticisms of instructional communication work is the atheoretical nature of the research (Friedrich, 1987). The primary goal of this dissertation was to answer calls to move away from variable-analytic research and begin the development of predictive instructional communication theories. In other words, it was argued in the beginning of this document that we need more testable theories to better explain what happens in the classroom context. Very few models of instructional communication have been advanced to this point, and those that have been developed are based on simple bivariate correlations (Baringer & McCroskey, 2000). Though only one small step in the theory-building process, the theoretical model which serves as the focus of this dissertation is supported by empirical evidence and goes beyond the variable-analytic work that is reflected in most instructional communication research.

As evidenced in the test of the Student Understanding Model, it is possible for two variables to correlate with one another without being predictive of one another. Therefore, when research studies rely solely on correlational analyses as a theoretical basis for a more comprehensive causal process model, results may differ. In other words, when the same variables are tested using more sophisticated statistical procedures, differing explanations may arise. For example, a great deal of instructional communication research has focused on immediacy and its effect on student learning outcomes. When included in a causal process theoretical model, however, the effect is not as large as inferred from the amount of work dedicated to this construct.

Next, as the primary dependent variable in the current study, a new construct to measure learning outcomes has been introduced. There are several concerns surrounding measures commonly used to operationalize student learning including the learning loss
measure (Richmond et al., 1987) and the learning indicators measure (Frymier et al., 1996). The measure created for this study is based on literature surrounding clarity in the classroom (Simonds, 1997a). Specifically, student understanding is a measure of how well students understand course content and the application of material. It includes items such as “I understand examples the teacher uses in class,” and “I understand how to apply concepts learned in class.” Though this measure still replies on student self-reports, it is more articulate and more encompassing than the learning loss measure which consists of two items that ask “How much did you learn in this class?” and “How much could you have learned from an ideal teacher?”

Analysis of the student understanding measure used in this study indicates the instrument is reliable. Alpha reliability for this measure is .943 indicating a significant amount of internal consistency. Admittedly, the scale has only been tested in the current study, and further tests are warranted; however, the new measure provides a new way to measure student learning outcomes that is not based on grades or simple two item scales. Thus, the student understanding measure positively contributes to the existing body of instructional communication literature.

Like any dissertation worth writing, this study raises more questions than it provides answers (Chaffee & Berger, 1987). Particularly, the impact of immediacy behaviors is brought into question in terms of teacher-student relational development. Teacher immediacy behaviors may positively influence other cognitive dimensions (e.g., attention), but it does not predict unique variance in the teacher-student relationship. Regardless, approximately 50% of the variance in instructional solidarity was accounted for based on teacher and student communication behaviors. Additionally, this dissertation raises questions regarding the nature of teacher-student relationships and their impact on student understanding. What type of teacher-student relationship best predicts student understanding, if any? Are teachers encouraging relationships without regard to the negative impact on student understanding? These questions provide heuristic value and should be explored further in future research.

Finally, although the Student Understanding Model successfully predicted 26% of the variance in student understanding, there still remains a large proportion of variance not explained. Therefore, questions remain surrounding what instructional
communication scholars can do to create models that are able to predict student understanding.

In conclusion, the current study helps to clarify instructional communication research insofar as it provides empirical evidence of the significance of the relational dimension of communication between teacher and student. Therefore, in addition to the advancement of a causal process theoretical model of instructional communication and a newly created measure of student understanding, results of this dissertation raise questions pertaining to the existing body of research on instructional variables such as immediacy, teacher caring, and teacher-student relationships. Over time teachers, students, and relationships change, but one thing shall remain the same: learning is the bottom line (Clark, 2002). Only through careful, theoretical development will we be able to provide a comprehensive explanation of how students learn, and this dissertation will hopefully provide an initial step in this quest for understanding.
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