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A DISSERTATION APPROVED FOR THE
DEPARTMENT OF COMMUNICATION

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DEDICATION

This dissertation is dedicated to my wonderful wife, Patricia and children, Nadia and Aidan.

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"It takes a village…" most aptly describes the "…to complete a dissertation" process. It truly is a collective effort. Without the contributions of many individuals, this dissertation would have never found its way to completion. I first want to thank my wife, Patricia for her support, understanding, endurance, and most of all, her assistance in this entire process. To my co-chair, Ryan, words alone can never express my gratitude. Thank you for your patience, constant availability, words of encouragement, gratuitous assistance, and many late evenings sacrificed throughout this entire process, to ensure my completion through the program; I am forever indebted to you. To my other co-chair Amy, I will always be in awe of your ability to foresee the big picture of research! Your insight and words of wisdom were not only valuable but essential throughout the entire process-thank you. To the members of my committee, thank you for taking the time to see me through to the end. You expertise and contributions helped not only in the dissertation process but also to make me a more complete scholar. Finally, I want to thank Dr. Alicia Mason for her support and constant willingness to be a soundboard for my thoughts and ideas throughout my time at OU. I also want to thank my family, my in-laws, for their support and help in completing this endeavor.

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ABSTRACT

Almost certainly, students communicate with each other about course-related material, particularly about exam performance. However, what is less well understood is how often student-to-student communication occurs, when it occurs, and the effects these interactions may have. There were three goals of this study: to (a) collect descriptive data concerning student to student communication behaviors, (b) study the effects of student benchmarking communication behaviors on student motivation and state self-esteem, and (c) study if and how grade discussion results in deception. College students (N = 539) completed questionnaires about student-to-student communication behaviors, followed by an experiment that positioned students in a hypothetical first-person narrative scenario where they received a grade of A, C, or F on an exam in a class in their major; after class, the student engaged in a discussion about grade performance with three other peers from the class who were either close friends or schoolmates and who all reported scoring either A's, C's, or F's on the exam. Student motivation to prepare for a future exam and state self-esteem were measured to determine the effects of this grade communication. Finally, students were asked what grade they would report when prompted by their peers, which indicated whether or not students would lie. Results indicated students most frequently communicate with acquaintances and close friends about course material during and immediately prior to class. This communication about course-related material occurs more often with those who the student feels close to, such as a friend, and less often with those who the student feels distant from, such as a stranger. Students also reported the purpose of communicating with others about course-related topics was to

share information with others about class, either as an information seeker or information sharer. Ninety five percent of students confirmed grade discussion was a topic of student-student communication. Two factorial ANOVAs indicated main effects for student grade on motivation and state self-esteem. However, this experiment was unable to support the notion that *peer discussion* of grades affects student motivation or state self-esteem. Another factorial ANOVA indicated interaction effects and main effects of student grade on deception. This study partially confirmed that grade and grade discussion has an effect on deception. Major contributions of this research are (a) verification through systematic research that students communicate with other students concerning course-related topics, including grades, (b) the grade a student receives affects his/her motivation and state self-esteem, and (c) the grade and peer communication about grades affects the likelihood a student attempts to deceive others about his/her grades. Thus, results provide a picture of student-student benchmarking communication as common, complex, and sometimes deceitful. Student-student grade discussions are complicated social situations that can impact individual students both personally and academically and affect relationships between and among students.

CHAPTER 1

REVIEW OF THE LITERATURE

Instructional communication is the process by which teachers and students stimulate meaning in the minds of each other using messages (Mottet, Richmond, & McCroskey, 2006). Within this definition are the apparent actors and interactions that are the focus of research within the field of instructional communication. The General Model of Communication (GMC) by McCroskey, Valencic, and Richmond (2004) suggests instructional communication is composed of six components: instructional environment, instructional outcomes, teachers, teacher communication behaviors, student perceptions, and students. Of particular interest in this paper, and not addressed by the GMC, are *student* communication behaviors occurring between and among students. The instructional communication environment discussed in this paper emphasizes student communication, not general communication or communication involving the instructor. In an age when cooperative learning is emphasized at many colleges (O'Banion, 1997), it is important to study the influence of students on one another within the communication environment of a classroom.

Teaching is a form of communication. Extensive research describes and explains instruction as a communication process involving teacher-as-speaker, instruction-as-message, and student-as-receiver. What is less clear is how students may be simultaneously the source and recipient of important instructional messages. The goal of this research is to identify and understand the influence of student communication.

The research literature on teacher communication behavior is exhaustive. Researchers have studied the effects of various teacher actions such as body language (Miller, 2005), affective behaviors (Feldman, 1976; Nussbaum, 1992), humor (Frymier & Wesser, 2001), misbehaviors (Banfield, Richmond, & McCroskey, 2006; Kearney, Plax, Hayes, & Ivey, 1991; Thweatt & McCroskey, 1998), nonverbal behaviors such as gestures (Sime, 2006), and verbal behaviors such as clarity (Sidelinger & McCroskey, 1997), the use of language (Haleta, 1996), narratives (Downs, Javidi, & Nussbaum, 1988), and self-disclosure (Lannutti & Strauman, 2006). Probably the most widely studied teacher behavior is teacher immediacy and its effect on the instructional environment and participants in that environment (see Allen, Witt, & Wheeless, 2006 for a review). A dominant feature across all this research is the role of instructors as the featured source of communication.

Instructional environments, such as technology use (Witt & Schrodt, 2006), and instructional outcomes, such as effects on cognitive and affective learning and teacher evaluation (Katt et al., 2009), have received some attention in the communication research literature. Research in instructional outcomes focuses on topics such as increased learning (Pogue & AhYun, 2006; Wanzer & Frymier, 1999), improved attendance (Rocca, 2004), affect for the teacher (Banfield, Richmond, & McCroskey, 2006; Witt & Schrodt, 2006), and achievement (Chudgar & Sankar, 2008; Potter & Emanuel, 1990). Although teaching effectiveness is typically assessed by measuring student outcomes, some student outcomes are not attributed solely to teacher input or influence. For example, Russo and Koesten (2005) analyzed the discussion threads of an online class and found a positive relationship between

students' level of involvement in class discussion posted online and grades earned in the course.

Student-as-receiver is a communication process researched in instructional communication. Most student-as-receiver research highlights specific student characteristics such as communication apprehension (Allen & Bourhis, 1996; Chesebro, 2003; Ellis, 2004), communication compulsiveness (Fortney, Johnson, & Long, 2001), gender (Jones & Wheatley, 1990), motivation (Allen, Witt, & Wheeless, 2006; Christophel, 1990; McCroskey, Richmond, & Bennett, 2006) and demotivation (Christophel & Gorham, 1995) or focuses on certain student predispositions such as grade and learning orientation and humor orientation on communicative behavior and course affect (Frymier & Wesser, 2001). Kennedy-Lightsey and Myers (2009) argue that because students are an integral component of the instructional communication process, further research needs to be conducted that focuses on how their communicative traits influence their attitudes, beliefs, and behaviors in their communication interactions with their instructors and classmates. While this argument is indeed deserving of support, the latter part of this statement is the root of this research proposal. Student-as-sender in the communication process is widely overlooked and is deserving of further study as students play a vital role in the context of instruction within the classroom. Arguably, the interaction and communication that occurs between and among students may affect instruction of material.

Research on student-to-student communication is limited but not absent. Smith and Peterson (2007) studied advice seeking and receiving behaviors among students as they relate to student performance. The researchers found that students who sought

advice from a classmate concerning a class topic improved their exam scores. Those students discussing topics not related to the course resulted in a decrease in their exam scores. This demonstrates one effect of student communication on grades. Student interactions in small group settings can also affect student outcomes. Webb (1982) reported the role one plays in a small group and the amount of learning that occurs is dependent upon the relationship type among group members. Battistitch, Solomon, and Delucchi (1993) also found that the quality of group interaction of a student's group influences the quality of the student's learning from that group. Behaviors within the groups such as friendliness, helpfulness, concern, and collaborative effort were deemed "high-quality" group experiences and led to a positive classroom environment, increases in intrinsic motivation, and increased liking of school. In contrast, "low-quality" group experiences resulted in negative student outcomes. There is little doubt that students influence each other. The goal of this project is to further explore and understand how student-to-student communication affects those involved in the communicative process. One way students may be influenced is by weighing themselves against their classmates. Student self-worth is derived, at least in part, by comparing one's self to others. This comparison process inevitably influences students' perceptions of self-worth.

THEORETICAL PERSPECTIVES

Self-Worth Theory

Self-worth theory attempts to explain motivation, particularly in the academic context (Seifert, 2004). Self-worth theory operates from the premise that students are motivated to act in an effort to maintain or enhance feelings of self-worth (Covington,

1984). Covington (1984) argues that in Western cultures, one's worth is predicated on one's ability to perform adeptly on important tasks. If one can perform well at a worthwhile task, he/she is considered of worth. Having a high value motivates students to perform well on tasks deemed important, such as graded class assignments. As Covington (1984) states, "Individuals are driven to succeed not only to reap the personal and social benefits of success, but also because success aggrandizes a reputation for one's ability to achieve" (p. 8). While self-worth theory discusses the need for individuals to successfully *perform* tasks, the Self-Evaluation Maintenance Model, discussed next, addresses how individuals behave in an effort satisfy their need to *assess* their value by evaluating their performance on tasks.

Self-Evaluation Maintenance Model (SEM)

The Self-Evaluation Maintenance Model posits people behave in a manner that maintains or increases their self-evaluation (Tesser & Campbell, 1982). Self-evaluation in this sense is explained as the value a person assesses to him/herself, as in good or bad. Increases in self-evaluation result in an increase in one's self-determined value, or goodness. The Self-Evaluation Maintenance Model suggests people will inherently behave in a manner in which their actions lead them to judge themselves as good.

The types of relationships one maintains with others substantially influence self-evaluation (Tesser, 1988). It is important to understand what is meant when referencing the influence of others on self-evaluation. Tesser and Campbell (1983) describe three variables that determine the influence and direction on self-evaluation: (a) the closeness of the individual to the other, (b) the quality of the performance of

the other on the task, and (c) the relevance to the individual of the task that is being performed. The *other* can range from a close friend to a stranger to the self. The *performance* by the other can range from superior to inferior in comparison to the self. Finally, the *task* can range from highly relevant (important) to not relevant (unimportant) to the self. How these three variables are placed in relation to the self combine to help individuals determine their value, thus self-evaluation.

There are two basic processes, reflection and comparison, that individuals can experience based on the interaction of the three variables: the relevance of the task, the closeness of the two individuals, and the performance at the task (Tesser & Campbell, 1982). The reflection process refers to efforts to "bask in the glory" of others (p. 262). This reflection process tends to occur when the other is a close friend versus a stranger and his/her performance is seen as at least above mediocrity on a task that is of low relevance. The reflection process is based on the assumption of the existence of a connection between friends. If two people are friends and one succeeds at a task, the other will share in the feeling of accomplishment of his/her friend vicariously, thus basking in his/her glory of success. For example, according to the theory, if two friends deliver a speech in public and one performs well, the other experiences positive self-evaluation based on the superior performance of the friend. There is little need or willingness to "bask in the reflected glory" of a friend whose performance is merely average or even substandard. Poor performance results in a lower self-evaluation. Individuals do not feel the urge to share in the experience resulting from the poor performance or failure of a friend.

The reflection process often leads to another process, comparison (Tesser & Campbell, 1983). While a close friend performing well enhances our self-evaluation through reflection, it can also negatively affect our self-evaluation through a comparison process when the task is highly relevant to the self. The superior performance accomplished by another makes salient to the self one's less superior performance. Using the above public speech example, comparing one's performance to a friend's superior performance will result in negative or a decrease in self-evaluation in terms of one's speaking ability, but only if speaking ability is centrally important to one's self-definition. Even if one's performance is above average or even good, as long as it is inferior in comparison to the friend's performance, it will result in a negative comparison.

Superior performance is not enough to threaten self-evaluation by itself, as the closeness of the other must also be considered. Pleban and Tesser (1981) found that superior performance of a distant other does not influence the self-evaluation as much as the superior performance of a close other. Using the public speech example, if a stranger delivers a superior speech, it will have little effect on the self-evaluation of the individual because it is delivered by someone considered a stranger, not close to the individual.

The relevance of the task is also important to consider. A task deemed less relevant to one's self influences self-evaluation less than a task deemed highly relevant to one's self-definition. The superior performance of a speech will influence an individual more if he/she anticipates public speaking to be a crucial element of his/her identity. If an individual does not perceive the ability to speak well in public as

important, the inferior public speaking ability by comparison will have minimal influence on his/her self-evaluation.

Students' self-evaluation may be affected in the classroom as students often enroll in the class with friends or develop close friendships with classmates. As students participate in performance based tasks while enrolled in class, such as exams, assignments, and projects, the quality of their performance is often made salient through the grades they receive on those tasks. Embedded in the process is the relevance of the tasks engaged in by students. For many students, grades are important; thus, for at least most of these students the task of achieving high grades is relevant. The influence of graded assignments on students' self-evaluation should be studied as their self-esteem and self-concept may be affected through the reflection and comparison processes that result from graded assignments. As Festinger explains in his Social Comparison Theory (1954), this comparison process is common and frequent as individuals are driven to satisfy a need to understand and evaluate themselves through the comparison process.

Social Comparison Theory (SCT)

Festinger's (1954) Social Comparison Theory postulates that humans are driven to evaluate their opinions and abilities. A central proposition of the theory is the "similarity hypothesis," which predicts individuals prefer to compare themselves to similar others (Wood, 1989). Individuals often find it counterproductive to evaluate their ability by comparing themselves to someone who is dissimilar. For example, if one wishes to evaluate his or her ability to lift a heavy object, they would compare themselves to someone whom they consider similar. If the individual is a 25-year-old

male, he would not evaluate his ability to lift a heavy object by comparing himself to a 5-year-old child trying to lift the heavy object. Also, according to Festinger (1954), the more apparent the differences between one's self and the person with whom he/she is comparing, the less likely he/she will continue to use that person as a point of reference.

Another proposition advanced by the theory is the subjectivity/objectivity consideration when choosing to compare oneself to a similar other. Festinger (1954) argues individuals not only are driven to evaluate their opinions and abilities by comparing themselves to a similar other, but this comparison process based on subjective observations is done only to the extent that objective standards are not available. At the point in which objective standards are available, social comparisons to others based on subjective criteria are no longer considered.

The research on SCT has generally focused on the effects either proactively choosing a target individual, which one chooses to compare him/herself to, or reactive effects attributed to the social comparison process. For example, Huguet, Dumas, Monteil, and Genestoux (2001) studied the characteristics of individuals who were identified by others as targets for comparison, a much more proactive study of the comparison process. Reactive approaches have also been studied in SCT. For example, Buunk, Kuyper, and van der Zee (2005) study evaluated how the SCT process affects an individual's view of the compared other. Bui and Pelham (2000) also studied the reactive effects of social comparison by researching the effects of social comparison on an individual's self-concept.

Students often make comparisons in the classroom making SCT applicable in the classroom environment (Levine, 1983). Dijkstra, Kuyper, van der Werf, Buunk, and van der Zee (2008) conducted a review of instructional research since Festinger's theory was proposed in 1954. The studies included in their review were almost exclusively on kindergarten through twelfth grade students. They conclude that comparisons occur within the classroom but that students tend to prefer comparing their performances in an upward direction, meaning students tend to compare themselves to someone similar but slightly better than themselves. The comparison process within the classroom can be beneficial to students. Blanton, Buunk, Gibbons, and Kuyper (1999) reported an increase on course grades for children in kindergarten through the twelfth grade who chose to compare themselves to a same sex student who slightly out-performed them in class.

Much of the research on social comparison practices in the classroom is conducted almost exclusively on children (i.e., Buunk, Kuyper, & van der Zee, 2005; Dijkstra, Kuyper, van der Werf, Buunk, & Vander Zee, 2008; Huguet, Dumas, Monteil, & Genestoux, 2001). More research needs to be conducted to determine if social comparison practices extend into the college classroom. If it does continue into the college classroom, how is it manifested and what effects does it have on the college-aged student? The comparisons made in the classroom result in students making judgments, or evaluations, of themselves. These evaluations may result in positive or negative valuations of their identity. Students reach these evaluations by comparing themselves to others, a comparison process commonly known as benchmarking.

BENCHMARKING

The buzzword *benchmarking* grew in popularity during the 1990s, primarily within the field of business. The definition of benchmarking varies almost as much as the attribution of its origin. Moriarty and Smallman (2009) explain that definitions of the term are attributed to the various organizational perspectives that implement benchmarking practices. One definition traces benchmarking to a land surveying practice in which a point of reference was established in a landmark of known altitude in order to compare other objects (McNary, 1994). Moriarty and Smallman offer a description in which land surveyors would establish marks in the ground upon which they would align a bench used to support their tools. These marks ensured a subsequent placement of the bench in these marks thus resulting in measurements that were identical to previous measurements. Stacks (2005) defines benchmarking from the public relations perspective as "the process of creating points or measures against which a public relations campaign can be evaluated" (p. 74). Regardless of the perspective from which benchmarking is defined, the common thread holding these definitions together is that benchmarking is simply establishing a point of reference in order to draw comparisons.

The use of the term benchmarking spread from its popular use in the field of business to other disciplines, including the field of communication (e.g., Stacks, 2005). Stacks organizes benchmarks into three categories: informational, motivational, and behavioral. While these three categories may differ slightly, they fit the concept of benchmarking as they establish a point of reference to compare in the future. Informational benchmarks refer to how much information is being released,

motivational benchmarks measure attitude change that occurs due to the information, and behavioral benchmarks establish changes in behavior by those receiving the information. For the purposes of this study, I operationalize informational benchmarks as a discussion about grades among friends, motivational benchmarks as the changes in state self-esteem due to the grade discussion, and behavioral benchmarks as the changes in motivation to prepare for a future exam attributed to the discussion of grades with one's friends. The approach of this study is to examine if the informational benchmarking communication practice of discussing grades affects student motivation, state self-esteem, and behavior (i.e., deception regarding grades). Similar to Stacks (2005), I utilize the general benchmarking metaphor to highlight the importance of student-to-student communication.

The use of the term benchmarking as a means of measuring achievement of a goal(s) and identification of achievement results can be applied to a communication activity that occurs often within the college classroom—grade comparison. Such communication can take many forms. An instructor may share grade statistics with the class, such as class average or grade range and distribution. A student may discuss his/her grade with the instructor, often comparing his/her grade result to that of the disclosed class statistical information as described above. Students may also discuss their grade results with other students. This benchmarking process between students, because of its communicative nature, will be the focus of this study.

It is important to study the benchmarking process from a communication perspective. Understanding of the framing and interpretation of messages in student-to-student communication may provide helpful insight into this often overlooked

segment of the communication environment of the classroom. I argue that *how* these benchmarking messages are framed and interpreted likely influences student motivation and self-esteem.

LANGUAGE PROCESSING: STUDENT MOTIVATION AND SELF-ESTEEM

Motivation

Student motivation in the classroom is a commonly studied variable. Much of the existing research examines specific influences on motivation. Examples of these variables that influence student motivation are teacher characteristics or behaviors such as immediacy and credibility (Pogue & AhYun, 2006), teacher confirmation (Ellis, 2004), and teacher immediacy and clarity (Chesebro, 2003). To date, research is virtually absent on the effects of student-to-student communication on motivation. It is difficult to deny the potential influence of a student's peers, including influence on academic achievement. Action, or behavior, is a direct response to a motivator. Social influence in the instructional environment includes more than the relationship between student and teacher. Students may be motivated to act or change their behavior within the classroom by an impetus other than the teacher, such as another student.

Recently, researchers examined the role interpersonal relationships play in student motivation. Anderman and Kaplan (2008) report considerable attention is paid to the teacher-student relationship while only a limited number of researchers evaluated the influence of student-to-student relationships on student motivation. Those studies which focus on the influence of student-to-student relationships on student motivation investigate interpersonal relationships among children and young adolescents and not college students or adults. For example, Ryan (2001) reported that

peer groups influenced the intrinsic value, liking and enjoyment of school, of individuals. Berndt and Keefe (1995) found that students who reported more positive features in their friendship increased in their positive behaviors during the school year. Conversely, those students who reported more negative features in their friendships, such as disruptive behavior, increased in their negative behaviors during the school year. Students are influenced by other students, at least at a young age. Again, more research needs to be conducted to determine the impact of student-to-student relationships at the college level.

If an individual's motivation can be influenced by information, action, or relationships as described above, it raises an interesting question. Can information, such as the grade a friend received, an action such as conversing about grades, or the relationship such as grade comparison to one's close friends, influence an individual's motivation? I propose the communicative act of grade discussion (i.e., benchmarking) among friends can affect one's motivation to prepare for future assignments, specifically a student's motivation to prepare for a future exam in a course. Individuals are driven to succeed and that drive often will motivate future behaviors based on the feelings of success or failure one maintains.

Self-worth theory (Covington, 1984) attempts to explain students' desire to be valued and successful. According to the theory, success is achieved through personal accomplishment. People feel valued when the outcome of their efforts at a given task is deemed successful. Success is often determined through the comparison process in which one compares his/her outcome to that of a similar other, as suggested by Festinger (1954). If these theories explain student-to-student communication, we

would expect to find that when students discover grade differences between themselves and others, motivation to prepare is affected. To test this line of reasoning, the following hypotheses are advanced:

$H1_A$: When students engage in grade benchmarking communication behaviors and a student's score is lower than his/her peers on an exam, the student's motivation to prepare for a future exam is higher than if no difference in grades exist.

$H1_B$: When students engage in grade benchmarking communication behaviors and a student's score is higher than his/her peers on an exam, the student's motivation to prepare for a future exam is lower than if no difference in grades exist.

$H1_C$: Student motivation to prepare for a future exam should be higher when the student scores lower than a psychologically close other compared to a more psychologically distant other.

In other words, a lower grade by a student than that of his/her peers will increase his/her motivation to prepare for a future exam and a higher grade by a student than that of his/her peers will decrease his/her motivation to prepare for a future exam.

State Self-Esteem

Research efforts have focused on creating and refining scales that measure different dimensions of self-esteem (O'Brien, 1985; Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Rubin and Hewstone (1998) distinguish three general types of self-esteem, which are dichotomized as being either global versus specific self-esteem, personal versus social self-esteem, or trait versus state self-

esteem. Global self-esteem refers to an overall self-image; specific self-esteem refers to a particular self-image one holds. Personal self-esteem refers to an individual's identity; social self-esteem refers to a collective group's identity. State self-esteem is explained below; it is the focus in this research as it is the most applicable of the three general types of self-esteem within the context of the study.

Leary (1999) describes state self-esteem as "momentary fluctuations in a person's feelings about him- or herself" (p. 33) and trait self-esteem as "the person's general appraisal of his or her value" (p. 33). The distinguishing feature of state and trait self-esteem is time. As Rubin and Hewstone (1998) explain, "trait self-esteem is the product of self-evaluations made over a relatively long period of time, whereas state self-esteem is the product of self-evaluations carried out in the immediate present" (p. 42). Rubin and Hewstone also explain that "trait self-esteem is more properly regarded as the average of a series of state self-esteem values which vary across time" (p. 42).

State self-esteem fluctuates "as a function of the degree to which the person perceives others currently value their relationships with him or her….[while] trait self-esteem reflects the person's general sense that he or she is the sort of person who is valued and accepted by other people" (Leary, 1999, p. 34). Trait self-esteem and global self-esteem are similar as they both reflect a person's *general* sense of value. State self-esteem, on the other hand, is a short-term evaluation of value based on the relationship between the individual and some designated other. This study evaluates changes in state self-esteem based on grade differences between an individual and three close or moderately distant others.

Rubin and Hewstone (1998) make the argument one should "employ state self-esteem scales when attempting to detect transitory changes in self-regard brought about through the sort of short-term discrimination exhibited in laboratory research" (p. 42). As this study is experimental, a state self-esteem scale will be employed to collect data concerning the influence on self-esteem. A change in state self-esteem is anticipated as a student internalizes the difference between one's own grade and the grade of his/her friends.

An individual's state self-esteem fluctuates based on information received in the present (Covington, 1984). Students evaluate their performance by comparing themselves to similar others (Festinger, 1954). Given this claim, it is reasonable to believe that comparison can influence a student's state self-esteem. It is also reasonable to argue the discovery of one's poor performance in comparison to others can negatively affect one's self-esteem. Likewise, a good performance in comparison to others can positively affect one's self-esteem. Based on the literature concerning self-esteem, the following hypotheses are advanced:

$H2_A$: When students engage in grade benchmarking communication behaviors and a student's grade is lower than peers' grades, the student's state self-esteem is lower than when grades are equal.

$H2_B$: When students engage in grade benchmarking communication behaviors and a student's grade is higher than peers' grades, the student's state self-esteem is higher than when grades are equal.

$H2_C$: Student state self-esteem should be affected more when the student scores higher or lower than a close friend as compared to a schoolmate.

In other words, a decrease in state self-esteem results from a student earning a lower grade than his/her peers, while an increase in state self-esteem results from earning a higher grade than his/her peers. Also, grade comparisons will impact state self-esteem more according to the closeness level of the student to his/her peers.

LANGUAGE PRODUCTION: GRADE DECEPTION

In addition to determining the effect of benchmarking on state self-esteem and motivation, this study analyzed the influence of impression management in the benchmarking communication process. Students likely ask and disclose information with peers routinely, such as their performance on class assignments and exams. As students engage in the communicative act of benchmarking, identity is affected, specifically the identity concept known as *face*.

Famed sociologist Erving Goffman (1959) used the term *face* when referencing the public self-image all individuals claim. A universal human trait, according to Goffman, is the desire to have one's own face esteemed, meaning that all persons attempt to claim and cultivate a positive social meaning of their public image.

Brown and Levinson (1987) advanced the idea of face by explaining *facework*. A universal attribute of societies is to assist others in claiming and maintaining an esteemed and autonomous public self-image. Failure to aid another in maintaining and protecting one's face brings harm to the identity and thus the relationship. Individuals in society are taught to counter actions that threaten one's own or another's face. Therefore, Politeness Theory explains *facework* as any attempt to counter, mend, or mitigate the effect of face-threatening actions (Brown & Levinson). Face and facework likely become important features during the interactions that occur

as students benchmark their grades during communication with each other. As Morand (2000) states, politeness is best observed through the use of what are known as 'face-threatening-acts' (FTAs) which are situations in which one has the opportunity to threaten another's face. Interactions between students in which grade performance is discussed creates the opportunity for FTAs as a student's grade may be significantly higher than that of his/her peers, thus creating a situation where one's face is threatened by exposing or drawing attention to a lower earned grade on an assignment through conversation.

There is a myriad of research literature on facework. Research on facework has been applied fruitfully to a variety of contexts, including courtroom discourse (e.g., Penman, 1990) and romantic relationships (e.g., Kunkel, Wilson, Olufowote, & Robson, 2003; Wilson, Kunkel, Robson, Olufowote, & Soliz, 2008). Facework is often studied as part of compliance gaining strategies (e.g., Wilson, Aleman, & Leatham, 1998), in which considerations to face are sometimes examined through analysis of the discourse of requests (Craig, Tracy, & Spisak, 1986). Facework research typically studies how face enables and constrains participants' conversational strategies. Conversations in these studies typically consists of two acts: (a) a request for information, in which message construction is analyzed to identify and understand how face is considered in the request, and (b) a response to a request, in which message construction is also analyzed to identify and understand how face in considered in the response. Cupach and Metts (1994), for example, offer several face-saving options in which one may respond to requests, including lying, silence, equivocation, or hinting. While there is no shortage of research that examines the

request portion of discourse, the facework literature is limited in that it tends to consider responses. The use of facework here is an important adaptation of these applications in that it treats facework as a method for understanding deception as a risky positive-preventative move.

Cupach and Metts (1994) advanced the theory of facework by explaining that actions one may take can be classified as either corrective facework or preventative facework. Corrective facework are efforts that attempt to repair damage from a transgression, such as offering an apology or clarifying one's meaning so as to reduce the offensive interpretation. Preventative facework are efforts that attempt to avoid face-threatening topics. Examples of preventative facework include changing the topic so as to avoid face-threatening occurrences, ignoring face-threatening acts, or employing linguistic devices to minimize face-threatening statements (Cupach & Metts, 1994). Sometimes one may also choose to deceive or lie in order to prevent or correct a face-threatening occurrence. There is a basic difference between whether lying is classified as preventative or corrective. If the lie occurs in order to save face, it can be viewed as preventative. If it occurs after a face-threatening act has occurred and done in order to save face, it can be viewed as corrective. Lying is a risky act as the discovery of the deception is face-threatening to all involved (Cupach and Metts, 1994). In spite of this risk, deception does occur. Of interest in this study is the use of deception to prevent a face-threatening act.

As students benchmark grades with each other, the grade received may be cause for a student to consider his/her own image, or the face concerns of others. If a large disparity between the letter grade a student receives and the letter grade his/her

peers receive exists, he/she may make a decision to consider the face needs of his/her friends or even of his/her self. If a student makes a much better letter grade than his/her peers, he/she may downplay the grade he/she received in an effort to save his/her peers' face. If a student makes a much lower letter grade than his/her peers, he/she may respond in such a way as to maintain a positive impression with his/her peers. If the student received the same letter grade as his/her peers, the grade reported should remain the same. However, there is likely to be a unique face threat embedded in the negative evaluation of receiving a grade of F in its own right. A student may respond to a peer's request concerning the grade he/she received on a common assignment directly or indirectly. For example, a student may share his/her exact grade, not share his/her exact grade, or respond in a way to avoid disclosing his/her grade without blatantly refusing to answer.

The grade one receives may play a role in one's decision to deceive. McLaughlin, Cody, and O'Hair (1983) identified a dialectical tension, the mitigation-aggravation continuum that occurs between addressing the face needs of others while simultaneously addressing the face needs of ones' self. Based on this mitigation-aggravation continuum, it is conceivable that one may deceptively report his/her grade as lower in order to manage damage to others' face; the risks involved with lying are worth the effort if one can save the face of others. However, the damage to one's own face is worth the effort of deception if the damage can be avoided with a lie. Receiving a low score on an exam in one's major is damaging to one's face, particularly when compared to others who score higher. Thus, the following hypothesis is advanced:

$H3_A$: When engaging in grade benchmarking communication with peers and a student's grade differs from peers, the student is more likely to engage in deception when reporting his/her grade.

If a student receives a grade that differs from those with whom he/she is comparing during a discussion about grades, he/she is more likely to act deceptively when reporting his/her grade to the others; such a deceptive move functions as a preventative facework strategy.

Another factor that likely influences the use of deception when disclosing grades is the closeness of the individuals. Predicting how individuals respond to situations where face is a concern has proven difficult. The existing literature shows mixed results as to how the closeness of individuals influences responses where one's own face and the face of the other must be considered. For example, Brown and Levinson's (1987) model of politeness in language predicts that close relationships require less facework due to the established relationship, Baxter (1984) reports the use of more polite tactics when face-threatening statements were made in close relationships.

Hodgins, Liebeskind, and Schwartz (1996) found that more attention was paid to the face of others and less to one's own face in situations where face threatening predicaments occurred between friends. These findings may speak to why it is difficult to accurately predict when individuals will use deception in order to avoid face-threatening actions. Hodgins, Liebeskind, and Schwartz (1996) propose the priority of other's face over one's own face is rooted in the desire to maintain the relationship with a close other. The risk to one's own face is not worth the risk of losing a close

relationship. Of course, there is a point in which the damage to one's own face becomes so severe that it the relationship is not worth keeping.

The relevance of the topic, a class that is part of a student's major and thus highly relevant and important, is not manipulated in this study; it remains constant. Tesser and Campbell's (1982) Self-Evaluation Maintenance Model, as explained above, discusses the three variables important in the model: relevance, performance, and closeness. This study manipulates both the performance and closeness but not relevance. Manipulating the relevance of the situation to one of low relevance or importance would have less of an effect on an individual, thereby potentially jeopardizing the quality of the findings. Although it is a highly relevant topic, it is not believed that it is so important as to warrant actions that would jeopardize one's relationship with a close other.

The closer the relationship between the individuals, the less likely one is to attempt to deceive the others. Conversely, the less close the relationship between the individuals, the more likely one is to attempt to deceive the others. In the current study, closeness is manipulated as students respond to three others who are close friends or schoolmates with whom they are not close. It is predicted that students are more likely to attempt to deceive distant schoolmates than close friends.

Hypothesis 3A makes predictions about *if* deception occurs based on the performance of a student and the nature of his/her relationship with the others with whom he/she is engaged in benchmarking communication. A prediction is also proposed about the nature of deception. If a student lies to close others or moderately

distant others about his/her grade, the following hypotheses predict the directional nature of the deception:

$H3_B$: If a student's grade is higher than close friends' reported grades on an assignment, when engaging in grade benchmarking communication, the student will deceptively report earning a grade that is lower than they actually received.

$H3_C$: If a student's grade is lower than close friends' reported grades on an assignment, when engaging in grade benchmarking communication, the student will deceptively report earning a grade that is higher than he/she actually received.

If a student's grade is higher than that of his/her friends, the student will report, when asked, a grade that is lower than his/her true grade in an effort to save the face of his/her friends. If a student's grade is lower than that of his/her friends, the student will report, when asked, a grade that is higher than his/her true grade in an effort to avoid losing face.

$H3_D$: When engaging in grade benchmarking communication with schoolmates and the student's grade is lower than his/her schoolmates' grade on an assignment, the student will deceptively report earning a grade that is higher than he/she actually received.

$H3_E$: When engaging in grade benchmarking communication with one's peers and the student's grade is higher than his/her peers' grade on an assignment, the student is more likely to engage in deception when reporting his/her grade to a friend than a schoolmate.

Saving one's own face is of lesser importance than saving the face of one's close friends. Conversely, saving one's own face is more important than saving the face of schoolmates.

CHAPTER 2

RESEARCH DESIGN AND METHODOLOGY

Design and Analysis

A series of three 3 (student receives grade of A, C, or F) X 3 (peer receives a grade of A, C, or F) X 2 (peer is a close friend or schoolmate) factorial and experimental designs were used to examine the relationship among student-peer grade benchmarking communicative messages on the dependent variables of student motivation to prepare for the next exam in a class, student state self-esteem, and the occurrence of deception about the student's grade when reporting the earned grade to peers. Power analysis was calculated based on a 3 X 3 X 2 factorial analysis of variance (ANOVA). In order to achieve acceptable power ($\beta = .80$, $\alpha = .05$), a sample size of 540 participants was required. One participant was duplicated and therefore the duplication was eliminated from the sample leaving a final total of 539 participants in the study.

Participants

A total of 539 students enrolled at a medium-sized university in the Midwest participated in this study. The sample included 296 females (55%) and 243 males, ranging in age from 18 to 61 ($M = 20.71$, $SD = 3.05$). Participants included 105 freshmen (20%), 146 sophomores (27%), 108 juniors (20%), 172 seniors (32%), and 3 graduate students (1%). Five students answered 'other' or did not provide an answer. Participants spanned over 53 different college majors within 11 different colleges. The ethnic makeup of the sample included 428 White/Non-Hispanics (79%), 29 Asian/Asian Americans (5%), 25 Black/African Americans (5%), 23 Latino/Hispanics

(4%), 23 Native Americans (4%), four from the Middle East (1%), and seven indicated an ethnicity other than those listed above (1%). When asked to report their Grade Point Average (GPA) both overall and within their majors, 427 reported an overall GPA range from 1.98 to 4.0 (M = 3.18, SD = .46) and 392 reported range of their GPA within their major from 2.0 to 4.0 (M = 3.33, SD = 1.55).

Procedures

Online and paper surveys were collected simultaneously in order to maximize the number of participants. In keeping with institutional review board oversight, participants first read consent forms prior to participation. A majority of participants (n = 434) were enrolled in communication courses and received course credit equal to one-half percent for their participation. These participants completed the survey online via SurveyMonkey.com®. The remaining participants (n = 115) were recruited from other college classes. These participants received an identical survey as the one available online but in paper format. Participation was voluntary with no course credit awarded.

Students first answered demographic questions (Appendix 1). Then, they were asked a series of questions concerning their communication behaviors with other students (Appendix 2-A & 2-B). Next, students were randomly assigned to read one of eighteen first-person hypothetical narrative scenarios. Within each scenario, participants either received a grade of A, C, or F on an exam in a class in their major. They then read that either three of their close friends or three schoolmates from the same class received an A, C, or F. All three friends or schoolmates reported receiving the same grade (Appendix 3).

After reading the hypothetical scenario, participants were directed to complete a questionnaire, which included the Student Motivation Scale (Beatty, 2004), a subscale of the State Self-Esteem Scale (Heatherton & Polivy, 1991), a question (Appendix 6) that asked what grade they would report to their peers and questions designed to gather descriptive information regarding student-to-student communication behaviors.

Dependent Variables

SMS. The 16-item Student Motivation Scale (Appendix 4) by Beatty, (2004) measures students' attitudes using bipolar, 7-point semantic differential items. Beatty (2004) reported reliability of the various combinations of studies comprising the Student Motivation Scale as acceptable to excellent with alpha coefficients ranging from .79 for a 3-item version to .96 for a 12-item version. In this study, an alpha reliability of .90 (M = 3.15, SD = 1.05) was obtained for the 16-item measure.

SSES. A 14-item subscale (Appendix 5) of the State Self-Esteem Scale (Heatherton & Polivy, 1991) was used to measure the performance and social dimensions of self-esteem using a 5-point, Likert scale 1 (*not at all*) to 5 (*extremely*). The original State Self-Esteem Scale is a 20-item multidimensional scale that measures three self-esteem dimensions: performance self-esteem, social self-esteem and appearance self-esteem. The six appearance self-esteem questions were not used as they are not relevant to this study. In a similar study on state self-esteem, Isobe and Ura (2006) also administered a sub-scale of the State Self-Esteem Scale in which they removed questions concerning appearance. In a series of studies to test the reliability and validity of the State Self-Esteem Scale (SSES), Heatherton and Polivy (1991)

reported reliability of the SSES at .92 and considerable evidence for the discriminant and construct validity of the SSES. In this study, an alpha reliability of .90 (M = 2.21, SD = .71) was obtained for the 14-item measure.

Deception. A new measure was created to detect grade deception by asking participants how they would respond to their peers if asked to report the grade they received. This measure limited possible response options to one of fifteen letter-grade responses (I received a high A, I received an A, I received a low A…I received a low F). In real life people likely respond in a variety of ways, including equivocation, but for the purposes of this exploratory study, students were forced to disclose to their peers a specific grade response when asked. This constraint enhanced the study's internal control as well as the interpretability of results.

Deception was detected using a mathematical equation, which assigned point values to each of the 18 randomly assigned hypothetical narrative scenarios and to each of the 15 possible response option choices. The student would select one of the 15 options as a response to the question asked by their peers requesting a report of their performance (Appendix 7). The scenarios limited students to having received an A, C, or F on their exam, thus the scenarios were assigned a value of -14 (grade of A), -8 (grade of C), or -2 (grade of F). The choice of numerical value was based on the numerical assignment of grade as described in Appendix 6. The choice of assigning a negative value was necessary in order to later identify the direction and the degree of the deception, as described below. A value was then assigned to the response option the student selected when asked how they would respond when asked to report their grade performance on the exam. The value assigned to the response option they chose

was added to the value assigned to the random scenario they were randomly assigned. If a student responded with the exact response they were randomly assigned, their net score would be zero. If a student chose a response that differed from their randomly assigned scenario grade, the calculation would result in a numerical value. Thus, a resulting positive number indicated the student responded deceptively in an upward direction (stating they received a grade higher than they received in the scenario). A negative number indicated the student responded deceptively in a downward direction (stating they received a grade lower than they actually received in the scenario). In addition, the degree of value that resulted from the summation provided the magnitude of deception from the student. The possible range of scores was from +13 to -13; student receives an F (-2) in the scenario, yet reports receiving a high A (+15) for a difference of +13 or the student receives an A (-14) in the scenario, yet reports receiving a low F (+1) for a difference of -13.

PILOT STUDIES

First Pilot Study Results and Manipulation Check

Data for a pilot study was collected from 38 undergraduate students currently enrolled in an interpersonal communication course of which the researcher is the instructor. Students completed the full questionnaire. Additionally, participants answered several questions designed to test the manipulations provided in the scenarios.

Perceived importance of grades. In order to check the researcher's assumption that students desire a grade of A over a C and a grade of C over an F, students were asked their preference of the paired grades. When asked to respond to grade

preference with the three choice options of *yes, no, or don't care/indifferent*, 97.4% of students reported yes to preferring and A to a C, 92.1% reported a yes preference of a C to an F, and 100% reported a yes preference for an A over an F. Also, students provided an evaluation of A, C, and F grades by selecting between two anchored responses (good/bad, acceptable/unacceptable, desirable/undesirable, and favorable/unfavorable) on a 7-point, semantic differential scale. Responses ranged from 1-7 with the negative anchor represented by one and positive anchor represented by seven. As expected, responses averaged 6.9 for receiving an A, Cronbach's alpha = .70; 3.8 for receiving a C, Cronbach's alpha = .88; and 1.1 for receiving an F, Cronbach's alpha = .52. Thus, participants in the pilot study readily recognized the importance of and indicated a preference for the higher grade.

Perceived relevance. In order to determine whether students perceived a class in their major and an exam in a class in their major to be important, a second set of manipulation check prompts were answered. Two prompts were asked using an identical set of paired anchored responses on a 7-point, semantic differential scale (important/unimportant, relevant/irrelevant, significant/insignificant, meaningful/meaningless, and a priority/not a priority). Responses ranged from 1-7 with the negative anchor represented by one and positive anchor represented by seven. The first prompt asked students their opinion about a class that is part of their major, Cronbach's alpha = .75, (M = 6.57, SD = .56). The second prompt asked students their opinion about an exam within a class of their major, Cronbach's alpha = .82, (M = 6.43, SD = .76). Thus, judging by these mean scores, participants deemed a class in their major and an exam in their major to be important. These two questions were also

asked with a *yes/no* response choice with 100% responding a class that counts toward their major is important and 97.4% responding that an exam grade in a major class is important.

Perceived closeness. In order to test whether participants perceived a relative difference in the closeness between friends and acquaintances, another manipulation check was performed. Students responded to a prompt that captured their perceptions of closeness to the interactants in the scenario by way of four, 7-point, semantic differential scales (intimate/distant, familiar/unfamiliar, connected/disconnected, close/distant), Cronbach's alpha = .92. Scores of one represented the weakest social closeness to the interactants in the scenario. Scores of seven represented the strongest social closeness to the interactants in the scenario. Respondents did not perceive a significant difference between interacting with friends (M = 4.58, SD = 1.79) or acquaintances (M = 4.93, SD = .88), $t(24.45) = -.75$, $p = .459$.

Second Pilot Study and Manipulation Check

Alternative descriptor for distant other. Given that the independent samples *t*-test revealed students in the first pilot study did not recognize a significant difference in closeness between a friend and an acquaintance, a follow-up questionnaire was designed to determine an alternate descriptor for acquaintance, which students would perceive as different from friend. Twenty-one student participants were asked to force rate eight terms (Acquaintance, Associate, Classmate, Colleague, Friend, Peer, Schoolmate, and Stranger) in order of perceived closeness with no two terms having the same ranking. Also, students then ranked each term individually using a 7-point, semantic difference scale anchored by the two statements "I feel close to this person"

and “I do not feel close to this person.” Analysis of results revealed the term *schoolmate* was perceived as distant, second only to *stranger*. Since stranger does not fit within the theoretical framework of the scenarios, it was determined to be an inappropriate alternative descriptor, thus the term schoolmate was selected to replace acquaintance in the study.

Second Pilot Study Results

A second pilot study was designed to capture whether students perceived a difference between a friend and a schoolmate. Nineteen student participants, who did not participate in the first pilot study, completed a shortened version of the first pilot study. Four groups were created using the two most extreme grade comparison cases for the friend group and the schoolmate group (i.e., student/schoolmate receives A/F). Students responded to a prompt that captured their perceptions of closeness to the interactants in the scenario by way of eight, 7-point, semantic differential scales (intimate/distant, similar/dissimilar, familiar/unfamiliar, comfortable/uncomfortable, connected/disconnected, close/distant, affinity/indifference, unattached/attached), Cronbach’s alpha = .83.

Results indicated that students did not perceive a significant difference in closeness between a friend (M = 4.46, SD = 1.14) and schoolmate (M = 3.76, SD = 1.0), $t(17) = 1.42$, $p = .18$. While the second study manipulation check did not confirm that participants perceived a significant difference between friends and schoolmates—in contrast to the results of the first manipulation check—mean scores were directionally appropriate when comparing the use of friend-acquaintance versus friend-schoolmate. Thus, I elected to employ the term schoolmate in the study.

CHAPTER 3

RESULTS

Descriptive data.

Several questions were asked in an effort to understand student-to-student communication behaviors. The questions provided information about (a) the types of participants student communicate with, such as whether the other student was a friend, acquaintance, or stranger, (b) the frequency of the communication including how often and what point in time the communication occurred such as timing in relation to class (i.e., before, during, after class), and (c) the purpose of the information –did the communication serve as a disclosure of information or was it in an effort to seek out or gain information? When asked to identify with whom students usually communicate concerning class topics, the most common response was: with acquaintances currently enrolled (n = 206), with close friends currently enrolled (n = 200), and with close friends not currently enrolled in their class (n = 75) as Table 1 indicates.

Table 1

Student-Student Communication

Item	Frequency	Percent
When do you most frequently communicate with your fellow classmates?		
Immediately before class	170	34.9
During class	203	41.7
Immediately after class	78	16.0
Several hours before class	6	1.2
Several hours after class	16	3.3
On days when class does not meet	14	2.9
With whom do you most frequently communicate concerning class/course topics?		
Close friend(s) currently enrolled in my class	200	40.2
Close friend(s) not currently enrolled in my class	75	15.1
Acquaintances(s) currently enrolled in my class	206	41.4
Acquaintance(s) not currently enrolled in my class	5	1.0
Stranger(s) enrolled in my class	11	2.2
Stranger(s) not enrolled in my class	1	0.2

NOTE: Participants were limited to choosing only one option per question.

Students were questioned concerning their communication behaviors with classmates in relation to the meeting time of the class. As Table 1 reports, 203 students reported communicating with classmates during class, 170 reported communicating with classmates immediately before class, and 78 reported communicating with classmates immediately after class. Sixteen students reported communicating with classmates up to several hours after class, 14 reported communicating with classmates on days when class does not meet, and six reported communicating up to several hours after class.

Students were asked to report on how often they communicate with others (friends, acquaintances, and strangers) about course related topics and the information-seeking or information-sharing role they play in those interactions. As Table 2

indicates, the largest percentage of communication occurred between students and friends fairly often (47.8%) and between students and acquaintances fairly often (43.8%) but only rarely (39.6%) between students and strangers about class related topics. Students only reported sharing or disclosing information about a class they are currently enrolled in on occasion (40.8%) but fairly often (39.3%) seek out information from students about a course in which they are currently enrolled. Quite often grades are the topic of discussion as students reported discussing grades: on occasion 35.7 percent of the time, fairly often 23 percent of the time, and very often 6.8 percent of the time. Thus, a study of student-to-student benchmarking communication is warranted considering students communicate with each other frequently about topics like grades.

Table 2

Frequency of Student-Student Communication

Question	Frequency (Percentage)									
	Never		Rarely		On Occasion		Fairly Often		Very Often	
How often do you communicate with close friends in your class about class/course related topics?	14	(3.0)	19	(4.0)	91	(19.2)	226	(47.8)	123	(26.0)
How often do you communicate with acquaintances in your class about class/course related topics?	4	(0.9)	39	(8.2)	171	(36.1)	207	(43.8)	52	(11.0)
How often do you communicate with strangers in you class about class/course related topics?	47	(10.0)	187	(39.6)	173	(36.6)	56	(11.9)	9	(1.9)
How often do you share/disclose information with fellow students about a class in which you are currently enrolled?	11	(2.3)	69	(14.6)	193	(40.8)	165	(34.9)	35	(7.4)
How often do you seek information from fellow students about a course you are currently taking?	9	(1.9)	65	(13.7)	161	(34.0)	186	(39.3)	52	(11.0)
How often are you asked to share/disclose information with fellow students about a course you are enrolled in together?	14	(3.0)	69	(14.6)	188	(39.7)	161	(34.0)	41	(8.7)
How often do you discuss grades with other students?	27	(5.7)	136	(28.8)	169	(35.7)	109	(23.0)	32	(6.8)

Student Motivation

A 3 (student receive grade of A, C, or F) X 3 (peer receives a grade of A, C, or F) X 2 (peer is a close friend or schoolmate) ANOVA was conducted to evaluate the effects

of student benchmarking communication concerning the grades received on a recent exam on a student's motivation to prepare for a future exam in a class. Means and standard deviations for motivation as a function of the three factors are presented in Table 3.1.

Table 3.1

The Effects of Student Benchmarking Communication of Grades on Student Motivation

Student Grade	Other Grade	Motivation	
		Mean	SD
A	A (Friend)	2.45	0.84
	A (Schoolmate)	2.95	1.02
	C (Friend)	2.91	0.67
	C (Schoolmate)	3.03	1.24
	F (Friend)	2.78	0.92
	F (Schoolmate)	2.88	1.02
	Total (Friend)	2.71	0.83
	Total (Schoolmate)	2.95	1.08
	Total	2.83	0.97
C	A (Friend)	3.25	1.04
	A (Schoolmate)	3.16	0.83
	C (Friend)	3.19	0.96
	C (Schoolmate)	3.33	0.94
	F (Friend)	3.05	0.70
	F (Schoolmate)	3.06	0.89
	Total (Friend)	3.16	0.90
	Total (Schoolmate)	3.18	0.88
	Total	3.17	0.89
F	A (Friend)	3.31	1.25
	A (Schoolmate)	3.37	1.14
	C (Friend)	3.35	1.33
	C (Schoolmate)	3.53	1.14
	F (Friend)	3.55	1.40
	F (Schoolmate)	3.52	0.98
	Total (Friend)	3.40	1.32
	Total (Schoolmate)	3.47	1.08
	Total	3.44	1.20

The factoral ANOVA indicated no significant interaction among the three independent variables, $F(4, 521) = .42$, $p = .80$, partial $\eta^2 = .003$. Furthermore, the ANOVA indicated no significant interactions among any of the possible parings of the three independent variables: student's grade by peers' grade, $F(4, 521) = .66$, $p = .62$, partial $\eta^2 = .005$; student's grade by closeness, $F(2, 521) = .56$, $p = .57$, partial $\eta^2 = .002$; peers' grade by closeness, $F(2, 521) = .22$, $p = .81$, partial $\eta^2 = .001$. However, the analysis revealed a significant main effect for student grade, $F(2, 521) = 15.40$, $p < .001$, partial $\eta^2 = .06$, but no main effects for peers' grade, $F(2, 521) = .87$, $p = .42$, partial $\eta^2 = .003$ or closeness, $F(1, 521) = 1.51$, $p = .22$, partial $\eta^2 = .003$ were found.

One of the primary purposes of this study was to determine the relative effects of student benchmarking communication on student motivation to study. Thus, a main effect for student grade was not necessarily the focus of this study. However, since a main effect was determined for student grade, follow-up analysis was used to examine this issue. Follow-up tests consisted of all pairwise comparisons among the three possible grades (A, C, F). The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. Results indicated students who received an A ($M = 2.83$, $SD = .97$) were significantly less motivated to study for the next test than students who received a C ($M = 3.17$, $SD = .89$), $p < .01$. Likewise, students who received an A were significantly less motivated to study for the next test than students who received an F ($M = 3.44$, $SD = 1.20$), $p < .001$. Finally, students who received a C were significantly less motivated to study for the next test than students who received an F, $p < .05$.

Hypothesis 1. H1 states student motivation to prepare for a future exam is affected by student benchmarking communication concerning the grade comparison between a student and peers on a recently completed exam. H1 posited three aspects of the effect of grade benchmarking communication on student motivation to prepare for a future exam: $H1_A$ posited if a student scored lower than the reported scores of his/her peers, his/her motivation to prepare for a future exam would increase. $H1_B$ posited if a student scored higher than the reported scores his/her peers, his/her motivation to prepare for a future exam would decrease. Finally, $H1_C$ posited scoring lower than a close friend would increase the student's motivation to prepare for a future exam more than scoring lower than a schoolmate. None of the three predictions concerning Hypothesis 1 were supported by this experiment. However, the experiment did reveal that student motivation to prepare for a future exam is affected by the actual grade a student receives. This data did not support the notion that the benchmarking comparison—a process a student undergoes when discussing a recently received exam grade with peers—affects motivation.

State Self-Esteem (Performance)

A 3 (student receive grade of A, C, or F) X 3 (peer receives a grade of A, C, or F) X 2 (peer is a close friend or schoolmate) ANOVA was conducted to evaluate the effects of student benchmarking communication concerning the grades received on a recent exam on a student's state self-esteem. The means and standard deviations for state self-esteem as a function of the three factors are presented in Table 3.2.

Table 3.2

The Effects of Student Benchmarking Communication of Grades on Student State Self-Esteem

Student Grade	Other Grade	Self-Esteem Mean	SD
A	A (Friend)	2.56	0.86
	A (Schoolmate)	2.55	0.58
	C (Friend)	2.45	0.54
	C (Schoolmate)	2.42	0.67
	F (Friend)	2.54	0.62
	F (Schoolmate)	2.53	0.73
	Total (Friend)	2.52	0.68
	Total (Schoolmate)	2.50	0.66
	Total	2.51	0.67
C	A (Friend)	1.80	0.48
	A (Schoolmate)	2.05	0.68
	C (Friend)	2.15	0.63
	C (Schoolmate)	2.03	0.56
	F (Friend)	2.25	0.68
	F (Schoolmate)	2.24	0.53
	Total (Friend)	2.07	0.63
	Total (Schoolmate)	2.11	0.60
	Total	2.09	0.61
F	A (Friend)	2.09	0.74
	A (Schoolmate)	2.11	0.69
	C (Friend)	1.90	0.72
	C (Schoolmate)	2.01	0.75
	F (Friend)	1.89	0.67
	F (Schoolmate)	2.11	0.86
	Total (Friend)	1.96	0.71
	Total (Schoolmate)	2.08	0.76
	Total	2.02	0.74

The ANOVA indicated no significant interaction among the three independent variables, $F(4, 520) = .65$, $p = .63$, partial $\eta^2 = .005$. Similarly, the ANOVA indicated no significant interactions among any of the possible parings of the three independent variables: student's grade by peers' grade, $F(4, 520) = 1.86$, $p = .12$, partial $\eta^2 = .01$;

student's grade by closeness, $F(2, 520) = .48$, $p = .62$, partial $\eta^2 = .002$; or peers' grade by closeness, $F(2, 520) = .25$, $p = .78$, partial $\eta^2 = .001$. However, results again revealed a significant main effect for student grade, $F(2, 520) = 27.74$, $p < .001$, partial $\eta^2 = .10$, but no main effects for peers' grade, $F(2, 520) = 1.06$, $p = .35$, partial $\eta^2 = .004$ or closeness, $F(1, 520) = .72$, $p = .40$, partial $\eta^2 = .001$ were found.

Another primary purpose of this study was to determine the relative effects of student benchmarking communication on student state self-esteem. Thus, a main effect for student grade was not necessarily the focus of this study. However, since a main effect was determined for student grade, follow-up analysis was used to examine this issue. Follow-up tests consisted of all pairwise comparisons among the three possible grades (A, C, F). The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. Results indicated students who received an A ($M = 2.51$, $SD = .67$) differed significantly in state self-esteem from students who received a C ($M = 2.09$, $SD = .61$), $p < .001$. Likewise, students who received an A differed significantly in state self-esteem from students who received an F ($M = 2.02$, $SD = .74$), $p < .001$. Interestingly, students who received a C did not differ significantly than students who received an F, $p = .99$.

Hypothesis 2. H2 posited student state self-esteem would be affected by student benchmarking communication when engaging in grade comparison between a student and peers on a recently completed exam. H2 posited three aspects of the effect of grade benchmarking communication on state self-esteem

$H2_A$ posited if a student scored lower than his/her peers, his/her state self-esteem would decrease. $H2_B$ posited if a student scored higher than his/her peers,

his/her state self-esteem would increase. $H2_C$ posited scoring higher or lower than a close friend would have a greater influence on the student's state self-esteem than scoring higher or lower than a schoolmate. None of the three predictions concerning Hypothesis 2 were supported by this experiment. However, the experiment did reveal that student state self-esteem is significantly influenced by the actual grade a student receives. This data did not support the notion that the comparison process itself a student undergoes when discussing a recently received exam grade with peers affects state self-esteem.

Deception

Deception was analyzed two different ways: First, a simple frequency calculation was used to determine what percentage of participants engaged in deception; and second, through a 3 (student receives grade of A, C, or F) X 3 (peers receive grade of A, C, or F) X 2 (peer is either a close friend or schoolmate) ANOVA.

After reading the hypothetical first-person scenarios, the student was asked what grade they would report to the peers they had received when asked; a list of 15 possible grade reporting responses was provided, including the grade they actually received in the scenario for the student to choose his/her response. If a student selected a grade reporting option other than the exact grade they received in the scenario, their response was marked as deceptive. A total of 141 (26%) participants provided a response other than the exact grade they received, and thus engaged in deception.

A 3 (student receive grade of A, C, or F) X 3 (peer receives a grade of A, C, or F) X 2 (peer is a close friend or schoolmate) ANOVA was conducted to evaluate the effects of student benchmarking communication concerning grades on deception when

reporting one's grade to peers. Means and standard deviations are provided in Table 3.3 below.

Table 3.3

The Effects of Student Benchmarking Communication of Grades on Deception

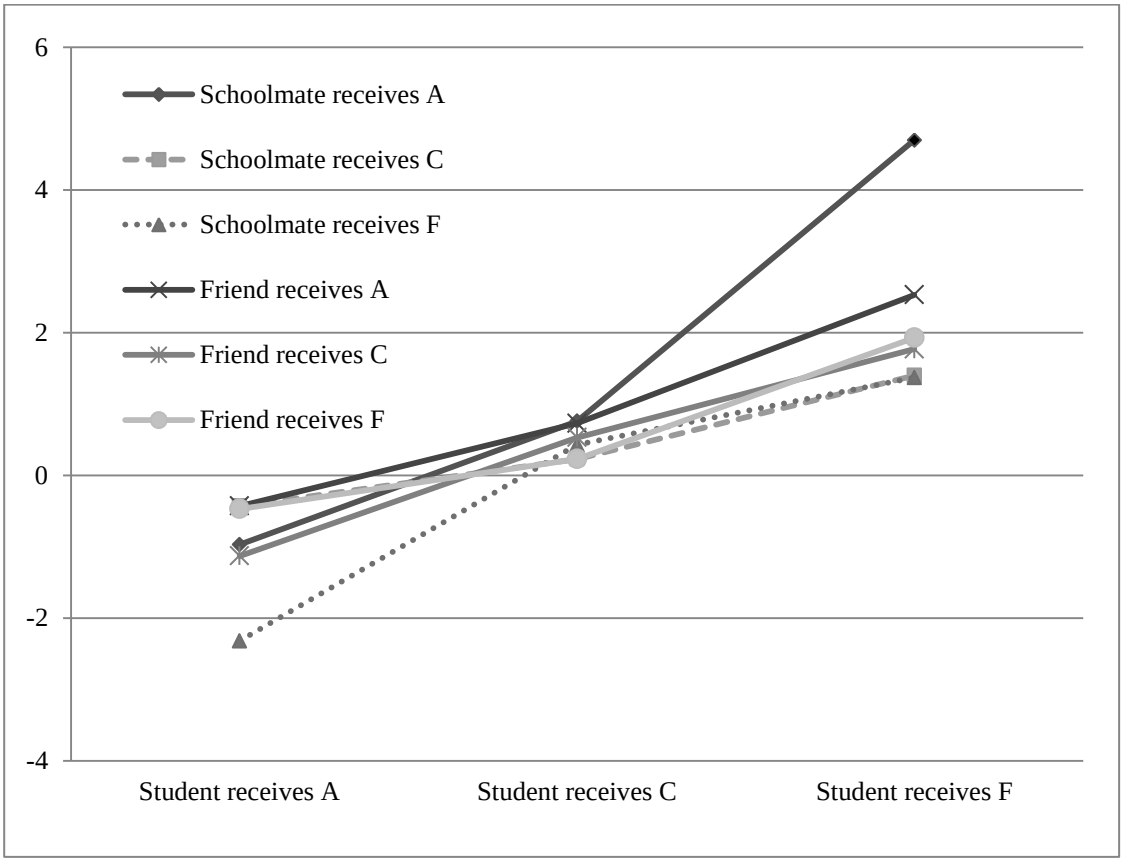
Student Grade	Other Grade	Deception	
		Mean	SD
A	A (Friend)	-0.43	1.14
	A (Schoolmate)	-0.97	2.65
	C (Friend)	-1.13	3.14
	C (Schoolmate)	-0.43	1.2
	F (Friend)	-0.47	2.26
	F (Schoolmate)	-2.32	4.05
	Total (Friend)	-0.68	2.32
	Total (Schoolmate)	-1.27	2.99
	Total	-0.97	2.69
C	A (Friend)	0.73	1.29
	A (Schoolmate)	0.76	1.68
	C (Friend)	0.53	2.03
	C (Schoolmate)	0.23	0.77
	F (Friend)	0.23	1.31
	F (Schoolmate)	0.43	2.34
	Total (Friend)	0.50	1.57
	Total (Schoolmate)	0.47	1.72
	Total	0.49	1.64
F	A (Friend)	2.53	3.94
	A (Schoolmate)	4.70	5.08
	C (Friend)	1.77	2.91
	C (Schoolmate)	1.40	2.27
	F (Friend)	1.93	3.80
	F (Schoolmate)	1.37	3.40
	Total (Friend)	2.08	3.55
	Total (Schoolmate)	2.49	4.04
	Total	2.28	3.80

The results for the ANOVA indicated a significant three-way interaction between grade the student received, grade the student's peers reported receiving and closeness of those peers to the student, $F(4, 520) = 2.65$, $p < .05$, partial $\eta^2 = .02$. As Figure 1 indicates, the significant three-way interaction revealed that students who

engaged in deception lied to a greater extent in cases where: (a) there existed a large disparity between their own grade and the grade of their schoolmates, (b) especially when the student's grade was much lower (e.g., F vs. A) than their schoolmates, or (c) if the student received an F and discussed the grade with friends, rather than schoolmates, regardless of the friends' grade.

Figure 1

Student Grade by Peer Grade by Closeness Three-Way Interaction

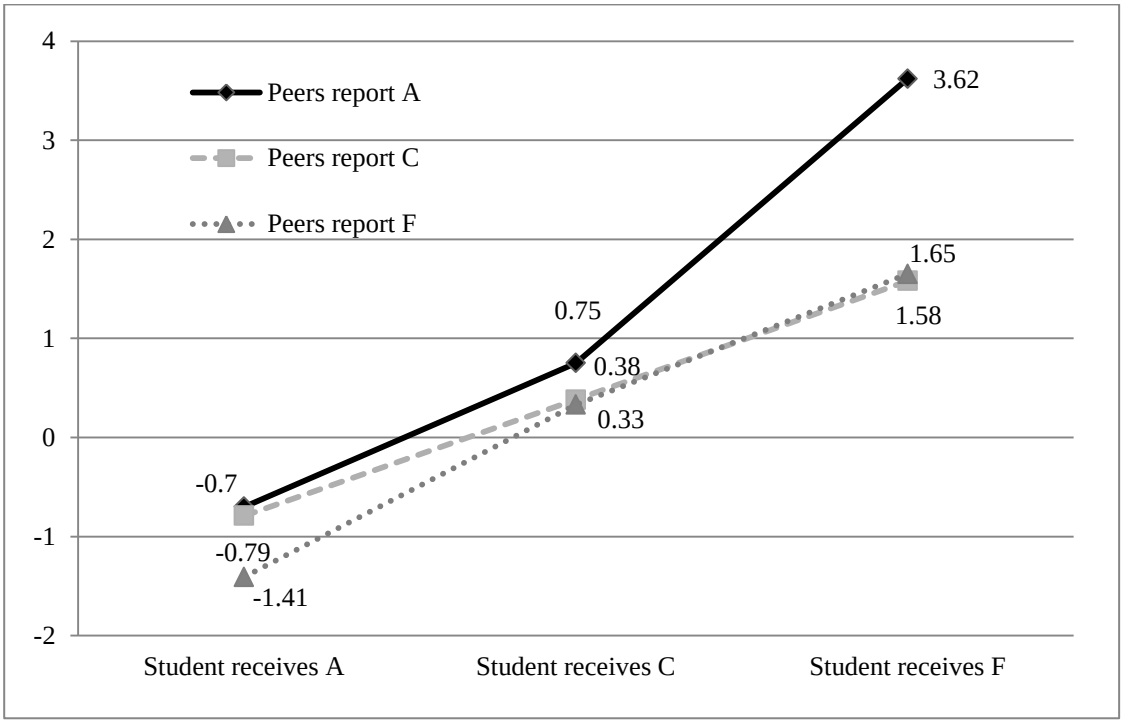


As Figure 2 indicates, the analysis revealed a significant two-way interaction effect between the grade the student received and the grade reported by the peers, $F(4, 520) = 2.48$, $p < .05$, partial $\eta^2 = .02$. In other words, peers' benchmarking

communication about grades moderates the relationship between student grade and the probability the student will deceptively report his/her own grade: When the student received an A or C, and their counterparts reported an A, C, or F, the student deceived to a much smaller extent (and toward the general direction of the counterpart) than when the student received an F and their counterparts reported an A; in which cases, students tended to report falsely a much higher grade. No other two-way interactions were found to be significant: student score by closeness, $F(2, 520) = 1.38$, $p = .25$, $\eta^2 = .01$; or peers' score by closeness, $F(2, 520) = 2.46$, $p = .09$, $\eta^2 = .01$.

Figure 2

Student Grade by Peer Grade Two-Way Interaction



Two significant main effects were also identified for student grade, $F(2, 520) = 61.18$, $p < .001$, partial $\eta^2 = .19$, and peers' reported grade, $F(2, 520) = 6.85$, $p = .001$,

partial η^2 = .03. Follow-up analyses were used to examine the significant main effect for student score. Follow-up tests consisted of all pairwise comparisons among the three possible grades (A, C, F). The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. Results indicated students who engaged in deception and received an A (M = -.97, SD = 2.69) differed significantly from students who received a C (M = .49, SD = 1.64), p <.001, in the severity of their deception. Likewise, students who engaged in deception and received an A differed significantly from students who received an F (M = 1.65, SD = 3.58), p < .001, in the severity of their deception. In both situations where students received an A, their deception was in a downward direction, meaning they reported receiving a lower grade than actually received. Finally, students who engaged in deception and received a C also differed significantly from students who received an F, p < .001, in the likelihood and severity of their deception as students who received a grade of F deceived upward by reporting scoring higher than they actually earned. Student benchmarking communication about grades resulted in significant differences in deception in all possible comparisons: Students receiving an A deceived in a downward direction compared to students reporting receiving a C, students receiving an A deceived in a downward direction compared to students reporting receiving an F, who deceived in an upward direction, and students receiving a C compared to students reporting receiving an F, who deceived in an upward direction.

Finally, follow-up analyses were used to examine the significant main effect for peer's reported score. Follow-up tests consisted of all pairwise comparisons among the three possible grades (A, C, F). The Tukey HSD procedure was used to control for

Type I error across the pairwise comparisons. Results indicated significant deception differences in scenarios in which peers reportedly received an A (M = 1.22, SD = 3.53) compared to scenarios in which peers reportedly received a C (M = .4, SD = 2.42), $p <$ .05. Likewise, in scenarios in which peers reportedly received an A differed significantly in deception from scenarios in which peers reportedly received an F (M = .18, SD = 3.29), $p <$ .01. Interestingly, in scenarios in which peers reportedly received a C did not differ significantly in deception from scenarios in which peers reportedly received an F, p = 1.00. Therefore, student benchmarking communication about grades resulted in a significance difference in deception where peers made an A compared to when peers reportedly made a C, and especially when the peers made an A compared to when peers reportedly made an F.

Hypothesis 3. H3 states student benchmarking communication about grade performance between a student and his/her peers on a recently completed exam would predict whether the student would respond deceptively and/or the type of response the student would provide when asked to report his/her grade by his/her peers. H3 evaluates aspects of the effect of grade benchmarking communication on deceptive behaviors based on the performance level and closeness of the others with whom the student is comparing.

H3$_A$ posits when a student's score differs from his/her peers, the student is more likely to engage in deception when asked to report his/her grade to peers. To test H3$_A$, an independent sample t-test was calculated to determine if a difference in deception existed between students who reportedly scored the same (n = 180) as their peers (M = .44, SD = 2.70) and students who reportedly scored different (n = 358)

from their peers (M = .68, SD = 3.34). Although 26% of the participants in the study engaged in deception, there was not a significant difference of deception between the two groups (t(432.34) = -.885, p = .38. Thus, $H3_A$ was not supported by this study.

$H3_B$ posits when a student scores higher than a close friend, the student will deceptively report a grade that is lower than he/she actually earned. There were three possible comparisons to test this hypothesis: student receives an A, close friends report receiving a C; student receives an A, close friends report receiving an F; student receives a C, close friends report receiving an F. ANOVA results indicated no significant difference where (a) the student received an A (M = -.97, SD = 2.69) and his/her close friends reported receiving a C (M = .39, SD = 2.96), p = .25, (b) the student received an A and his/her close friends reported receiving an F (M = .57, SD = 2.82), p = .25, or (c) the student received a C (M = .49, SD = 1.64) and his/her close friends reported receiving an F, p = .25. Thus,$H3_B$ was not supported by this experiment. However students who engaged in deception tended to report a score that was lower than their actual grade when the student scored an A and his/her close friends reported an A, C, or F; the score reported was in the predicted direction but not significantly lower.

$H3_C$ posits when a student scores lower than a close friend, the student will deceptively report a grade that is higher than he/she actually earned. There were three possible comparisons to test this hypothesis: student receives an F, close friends report receiving an A; student receives an F, close friends report receiving a C; student receives a C, close friends report receiving an A. ANOVA results indicated no significant difference where (a) the student received an F (M = 2.28, SD = 3.80) and

his/her close friends reported receiving an A (M = .94, SD = 2.74), p = .25, (b) the student received an F and his/her close friends reported receiving a C (M = .39, SD = 2.96), p = .25, or (c) the student received a C (M = .49, SD = 1.64) and his/her close friends reported receiving an A, p = .25. Thus, $H3_C$ was not supported by this experiment. However students who engaged in deception tended to report earning a higher grade than their actual grade, especially when the student received an F; the score reported was in the predicted direction but not significantly higher.

$H3_D$ posits when a student scores lower than a schoolmate, the student will deceptively report a grade that is higher than he/she actually earned. There were three possible comparisons to test this hypothesis: student receives a C, schoolmates reports receiving an A; student receives an F, schoolmates reports receiving a C; student receives an F, schoolmates reports receiving an A. ANOVA results indicated no significant difference where (a) the student received a C (M = .49, SD = 1.64) and his/her schoolmates reported receiving, an A (M = 1.51, SD = 4.18) , p = .25 (b) the student received an F (M = 2.28, SD = 3.80) and his/her schoolmates reported receiving a C (M = .42, SD = 1.71), p = .25, or (c) the student received an F and his/schoolmates reported receiving an A, p = .25. Thus, $H3_D$ was not supported by this experiment. However, students who engaged in deception tended to report earning a higher grade than their actual grade when they received an F, especially when their schoolmates reported receiving an A; the score reported was in the predicted direction but not significantly higher.

$H3_E$ posits when a student scores higher than a peer, the student is more likely to engage in deception when the peer is a schoolmate than a friend. There were three

possible comparisons to test this hypothesis: student receives an A, peer reports receiving a C; student receives an A, peer reports receiving an F, student receives a C, peer reports receiving an F. To test $H3_E$, an independent sample t-test was calculated to determine if a difference in deception existed in cases where students (n = 90) scored higher than a close friend (M = -.46, SD = 2.40) compared to cases where students (n = 89) scored higher than a schoolmate (M = -.80, SD = 3.04). A significant difference of deception between the two groups (t(167.01) = .836, p = .40 was not found. Thus, $H3_E$ was not supported by this study.

CHAPTER 4

DISCUSSION

The goals of this study were threefold: to (a) explore the relative characteristics (topic, timing, frequency, purpose, and communication target) of student-to-student communication, (b) measure the effects of student benchmarking communication about grades on student motivation and state self-esteem, and (c) identify the effects of student benchmarking communication on deception when communicating about one's grade. Each of these goals was successfully achieved. In addition to the discussion of the goals of this study, implications to pedagogical practices are also addressed below.

Study Results

First, this study of student-to-student communication indicated communication between students occurs. Research on communication that occurs between students is not only highly important (Johnson, 1981) but understudied in the college classroom (Fassinger, 1995). Of the many topics discussed between and among students, this study focused on communication about grades, which this study reported is a common topic of discussion between students. Grade discussion is a relatively common part of students' experience and therefore likely to factor into how they make sense of the meaning of their grades. Descriptive information about student-student communication behaviors demonstrated students most frequently communicate during and immediately before a class with acquaintances and friends currently enrolled in their classes. Students tend to discuss their courses with those they are physically close to, such as other students enrolled in classes with them as they are awaiting class to begin and while class is in session, especially those who they are more

psychologically close to, such as friends and acquaintances. The reported frequency of information-sharing appears approximately similar in situations where students reported being asked to share information about a course or when students reported asking others to share information about a course, including the discussion of grades. These descriptive statistics provide an initial and systematic view of the under-researched topic of student-to-student communication in educational environments. Future research can draw upon these findings as a means of justifying continued focus on the effects of this unique and complex aspect of the social context of the college classroom.

Second, Hypothesis 1 concentrated on the effects of student benchmarking communication about grades on a student's motivation to prepare for a future exam. Specifically, the hypothesis postulated three relationships between student benchmarking communication and motivation; a lower score than one's peers would result in an increase in motivation, a higher score than one's peers would result in a decrease in motivation, and a score lower than a friend would result in greater motivation than scoring lower than a schoolmate. The results of this study did not support Hypothesis 1. This study did find student's motivation is affected by the grade he/she receives, but it did not support the notion that motivation is affected by grade-related communication with his/her peers.

Festinger's (1954) Social Comparison Theory is predicated on the idea that individuals are driven, or motivated, to evaluate their ability or opinion. This study specifically focused on one's ability, not opinion. Similarly, Self-worth Theory (Covington, 1984) argues individuals are driven to be evaluated as worthy or valued.

Based on the premises of these two theories, it seemed logical that students would be motivated to evaluate their value or worth by engaging in benchmarking communication—a communicative manifestation of performance evaluation, or ability. Additionally, if a discussion resulted in a reduced or negative evaluation, presumably the student would be motivated to take action that could counter that negative evaluation. Thus, it seemed to be a logical extension of Festinger's notion into the classroom context to assume a student who received information that negatively impacted his/her self-worth or value, such as learning of a comparatively lower grade than one's peers, he/she would then be motivated to rectify that outcome by being more motivated to prepare, thereby resulting in efforts to improve a future grade.

Based on this logic, it was argued that students' desire to be of value and worth would drive them to remedy any information that contributed to a decrease in self-worth or value; students would be motivated to modify their behavior in an effort to increase their self-evaluation, such as increasing their motivation to prepare for a future exam with the goal of improving their performance and thus grade. This study analyzed that evaluation based on the comparative value of one's grade as compared to peers' reported grades. It was proposed one's motivation would be affected by the communication about grades between students. While students at least partially attribute their value and worth to grades, this study found the actual grades themselves serve to motivate students to increase their evaluation of worth more than benchmarking communication. Grade benchmarking communication was confined to a single incident in which an exam grade was compared between a single student and

three others. Further communication about grades, such as the meaning assigned to grades was not included in this grade benchmarking communication. The assumption was that students are motivated to earn high grades, especially in an important class, such as a class in one's major.

One of the premises of Social Comparison Theory is the objectivity/subjectivity dialectic. Festinger (1954) proposes individuals elect to engage in social comparison with a similar other to evaluate their ability or opinion, thereby enacting a subjective standard with which to evaluate themselves. He further postulates the presence of an objective standard will create a shift in evaluation from the subjective, social comparison standard to the objective evaluation standard. The concept of grades poses a challenge to this premise as grades are objective, subjective, or simultaneously objective and subjective.

Perhaps grades are viewed by students as objective in the sense that one's grade is often determined by the number of correct answers provided by the student to questions asked on an exam, meaning grades are derived from converting statistical representations into a letter grade, such as reporting receiving 95% correct as an A. Likewise, perhaps grades can also be viewed by students as subjective. Students may view grading as subjective in instances such as a teacher's evaluation of the quality of one's essay for example, where the student's grade is derived from how he/she compared to other students in the quality of an assignment. The letter grade one receives represents to the student how they compare to others in terms of evaluation, such that receiving a B means the quality of the work is above average, or better than at least some other students' work. This, of course, is based on the assumption that

students interpret a grade distribution as modeling a normally skewed statistical bell-shape of grade distribution in which a grade of C is the most prevalent, average grade in spite of recent articles reporting of grade inflation in which a grade of B is more representative of what if accepted as average (e.g., Sonner, 2000; Kohn, 2002).

Thus, it is likely that a grade can represent different, either objective or subjective, standards of measurement to students. A grade can be viewed by students as objective as it reports the student's level of knowledge in terms of a ratio of perfection. For example, if a student earns a B on an exam, the grade communicates a ratio of how 'correct' the student is compared to an errorless standard. Conversely, earning a B on an exam can also communicate a subjective meaning of how the student compares to the collective. For example, a student may view earning a B as meaning he/she is above average in his/her performance, or better than the average, or most other students who participated in the same graded activity. This assignment of the meaning of a grade is simultaneously objective and subjective; this ambiguous and unknown assignment of meaning by the student creates a challenge to the application and understanding of SCT within the social environment of the classroom.

Festinger (1954) theorizes individuals elect to compare themselves to similar others in an effort to evaluate their ability or opinions. This comparison process to similar others occurs when there is an absence of an objective standard or measurement. He further theorizes individuals will discontinue this subjective comparison process to similar others when an objective standard becomes available. Is there always a clear understanding of whether a standard of measurement is either subjective or objective? The use of grades as a measurement standard seems to

challenge the notion of mutual exclusivity between a standard of measurement being an objective or subjective evaluation tool. Social Comparison Theory does not advance a postulate for cases in which the standard of measurement is simultaneously objective and subjective.

Third, Hypothesis 2 focused on the effects of student benchmarking communication about grades on a student's state self-esteem. Covington's (1984) Self-Worth Theory mentioned above is closely related to the Self-Evaluation Maintenance Model proposed by Tesser and Campbell (1982) as it maintains individuals desire to evaluate their worth. Tesser and Campbell describe a process whereby one's self-evaluation is increased or decreased based on the interaction of three variables: relevance, performance, and closeness. Individuals compare themselves to a similar other when performing a task. The relevance, or importance of the task, their performance and the performance of the other, and how close they are to the other person is considered in determining if one evaluates, or judges one's self positively or negatively. This study maintained relevance as a highly important task (grade in a class of the students' major) and dichotomized the closeness of the individuals as being either a close friend or schoolmate and also varied the performance of the students as having scored either an A, C, or F on a recent exam.

A logical connection between state self-esteem and self-evaluation was assumed in this study. If one's state self-esteem is increased, it is logical to believe one's evaluation of the self is also increased and vice versa. An event, such as a conversation about grades that produces an increase in state self-esteem should translate into an increase in self-evaluation. Conversely, an event that negatively

lowers one's state self-esteem should therefore lower one's self-evaluation. Thus, state self-esteem was measured to identify the effects of student benchmarking communication about grades has on one's state self-esteem.

Hypothesis 2 postulated three relationships between student benchmarking communication and state self-esteem; a lower score than one's peers would result in lower state self-esteem, a higher score than one's peers would result in higher state self-esteem, and a score lower or higher than a friend would result in a greater change to state self-esteem than scoring lower or higher than a schoolmate. This study did not find support for Hypothesis 2. However, the findings of this study did indicate a student's state self-esteem is affected by the grade he/she receives. The combined effects of receiving a grade and discussing that grade with one's peers did not significantly affect state self-esteem; however, the effect of receiving a grade was found to be a predictor of a student's state self-esteem.

Fluctuations in state self-esteem are to be expected. These fluctuations result from information presented to an individual that offer an evaluation of the individual's performance. The expectation of this study was that a student's state self-esteem would be affected by the grade comparison process. The grade a student received affected his/her state self-esteem but grade comparison discussion between the student and his/her peers affecting state self-esteem was not supported. These results appear to reveal that the effects from receiving a grade on state self-esteem trump the effects on state self-esteem from grade comparison with one's peers or, perhaps, communication about grades between students appears to have negligible effects on state self-esteem.

The findings of this study do raise interesting questions concerning the Self-Evaluation Maintenance Model advanced by Tesser and Campbell (1982). The model argues a comparison and reflection process takes place when evaluating one's value based on the comparison process. According to the SEM model, one's self-evaluation is reduced when one's performance is inferior to a compared-other's superior performance on a highly relevant task, especially when the other is a close friend. At the same time, one's self-evaluation is increased through the same example as explained by the reflection process in which one basks in the reflected glory of the superior performance of the close friend. The model is not explicit about whether the change in self-evaluation results in a neutral, positive, or negative direction. If one experiences a simultaneous increase and decrease in self-evaluation, is there a net change to self-evaluation or is the net result no change in self-evaluation at all? This study found state self-esteem, and logically related, self-evaluation, was affected especially by the grade one received but did not support the notion that self-esteem was affected by benchmarking communication

Fourth, Hypothesis 3 predicted the effects of grade discussion between a student and his/her peers on deception. Specifically, the hypothesis postulated five relationships between student benchmarking communication and deception: a difference in one's score compared to one's peers is more likely to result in deception; if the student scores higher than friends, the student will deceptively report scoring a grade that is lower than actually earned; if the student scores lower than friends, the student will deceptively report a grade that is higher than actually earned; if the student scores a grade that is lower than schoolmates, the student will report a grade

that is higher than actually earned; and, a student is more likely to engage in deception about grades to schoolmates than friends. This study found support for hypothesis three.

A three-way interaction effect for student grade by peers' grade by closeness of the peers was discovered. This interaction implied deception occurs, based on the grade a student receives, the grades that student's peers report receiving, and the closeness of those peers. Thus, it is important to consider these three interacting aspects. There were two extremes cases contributing to the three-way interaction. Specifically, a student is more likely to deceive (a) in a downward direction, stating they received a lower grade than they actually received, when they receive an A and a schoolmate receives an F and (b) in an upward direction, stating they received a higher grade than they actually received, when they received an F and a peer received an A. The degree of deception is much greater, meaning a student lies to a greater degree, when the student receives an F and the peer is a schoolmate who receives an F versus when the student receives an F and the peer is a friend who receives an F. These results may support the notion that deceiving a schoolmate by representing one's own grade as converging toward their peer's grade is a "safer" face protection strategy to protect both the self and the other's positive faces when compared to deceiving a close friend in the sense that a schoolmate may have much less opportunity to check the veracity of deceitful self-presentations.

A two-way interaction effect for student grade by peers' grade was also discovered. This interaction implied deception occurs, based on the grade a student

receives and the grades his/her peers report receiving. Two main effects were also discovered for the grade a student receives and the grade one's peers report receiving.

It is important to evaluate the interpretation and the meaning-making process of situated interactions like student-student benchmarking communication. Why do individuals create and shape their messages the way they do? What are the thought processes that lead one to engage in deceptive messaging? Studying the effects of deception when deception is known to have occurred is somewhat different from studying the effects of deception when that deceptive behavior has not yet been detected, as the deceptive message is being constructed for example. This study initiates the discussion of deceptive behavior from a message production perspective, not a message processing perspective. This study interweaves grades with one's interpretation of grade meaning in an effort to identify if and to what degree deception occurs. How does a student interpret the meaning of an earned grade, especially when confronted with information of others' grades; and more importantly, how does *that* interpretation influence the construction of deceptive messages about his/her earned grade? The notion of face is one very likely explanation for why an individual chooses to engage in deception in this case.

The choice to deceive when discussing grades can be traced to Goffman's (1954) introduction of the concept of *face*. As Goffman proposes, individuals desire to cultivate a positive social meaning of their public image. The inherent social desirability of positive grades likely lead to behaviors that can help cultivate this positive public image, including choosing to deceive in an effort to maintain or cultivate a positive social meaning of one's public image. Brown and Levinson (1982)

further advanced the understanding of face by introducing the concept of face*work*. They explain facework as attempts to counter, mend, or mitigate effects of face-threatening action. People behave in an effort to prevent harm to their own public self but also consider possible harm to others' public image and possible harm to the relationship with the other. Cupach and Metts (1994) developed the idea of facework even further by categorizing one type of facework as preventative. Preventative facework is effort to avoid damage to face, either damage to one's face or others' face. One behavior of preventative facework includes deception. In an effort to save one's own face, someone else's face, or the relationship between the two, individuals may engage in deception.

This study found that some students engaged in deceptive behavior. Those who did engage in deceptive behavior did so by lying, presumably in an effort to save one's own as well as a peers' face. However, a comparison of effect sizes revealed that participants seemed much more concerned about lying to protect their own face, rather than their peers' public images. A student who engages in deception will do so by reporting a grade higher than they earned, presumably in an effort to save his/her face if he/she scores lower than his/her peers on an exam and is asked to report their grade. Additionally, a student who engages in deception will do so by reporting a higher grade than earned if the student's peers report having scored lower than the student on an exam and ask the student to report his/her grade on an exam; this too, is presumably in an effort to save face. If a student reportedly scores much higher than his/her peers, he/she tends to lie about the grade he/she received, presumably in an effort to save the peers' face by reporting a lower score than he/she actually received. The degree of the

lie toward a lower grade is less extreme than when the opposite occurs and a student reportedly scores much lower than his/her peers. In that case, the student tends to deceptively report having received a much higher grade than he/she actually received in an effort to save his/her own face to his/her peers. Also, in an effort to save one's face, a student will deceptively report a much higher grade to peers when asked if he/she scores an F, regardless of the grade the peers report. Finally, students consider the face of individuals who are psychologically closer to them, such as a close friend, more than those who are psychologically more distant from them, such as a schoolmate, by engaging in deception to a lesser degree to friends than schoolmates.

Fifth, these findings provide an opportunity to reflect on the nature of the meaning of grades. The nature of the meaning of grades is intriguing as the reporting of grades seems likely to be often inflated as students attempt to protect their own public images. For example, students engage in benchmarking communication about grades. During this communication, students may deceptively self-report their grade, usually in an upward direction. This decision to deceive is a result of peers first reporting their grade, which may be an inflated grade itself. This potential for a circular nature of self-reported grade inflation continues as students then presumably engage in benchmarking communication with other students in the future in which they base their conversation on the newly acquired information from previous benchmarking communication discussion. The cycle may continue with each subsequent benchmarking communicative interaction. It therefore begs the questions: Could students, then, ultimately begin to influence instructors' grading based on a mistaken understanding of grades? What is the relationship between deceptive self-

reporting of grades and the perception that grades are being inflated in higher education?

As the pilot study indicated, students value higher grades over lower grades. Self-Worth Theory and the Self-Evaluation Maintenance Model mentioned previously seem to suggest the quality of a grade communicates the quality of value of the person such that higher grades contribute to higher evaluations of value and worth as a person. The idea of face and facework also contribute to the value-assigned meaning of grades as a representation of individual value or worth of performance. Presumably, individuals will engage in deception when discussing grades to save the face of the individuals involved, including one's own self as well as the others involved in the discussion. Thus, these results may be revealing a kind of dance between students when discussing grades with each other. Social desirability seems to drive the communication behaviors of students when discussing grades; students may engage in deception when reporting grades in an effort to maintain a highly desired state of social identity.

Again, these findings raise several interesting questions. Is the meaning extrapolated from grades consistent for students, or is the interpreted meaning of grades changing based on the cumulative effects of deceptive reporting of grades resulting from the attention placed on the value of earning high grades to maintain a socially desired expectation? Is deception about grades occurring frequently enough that students' understanding of what grades represents is adversely affected? Also, what are the effects to the relationships between students and other students and students and teachers? If a student knowingly engages in deception when reporting

his/her grade, it is logical to assume he/she believes others are enacting the same behavior; that supposition may affect the relationship of the student with the others. Finally, if the desire to maintain a socially desirable grade drives many communicative decisions, what are the effects of that communication between student and teacher? What role does the frequent discussion of grades between students play in grade discussions between students and teachers? Are teachers affected by the same pressures of social desirability of grades as students to the degree they participate in the inflationary results of grade assignment as suggested by Mansfield (2001)?

Finally, it is important to note some of the cultural assumptions that undergird this study of student-to-student benchmarking communication. Self-Worth Theory (Covington, 1984) is predicated on a Westernized perspective. These same cultural considerations must be stressed as the population of this study was sampled from a mid-sized state university in the Midwest of the United States, it is crucial to consider the cultural perspective of the students in their responses. One must also consider differences in how the sample in this study assigns meaning to education, grades, and performance and how that meaning influences one's behavior. An individual's understandings of the role of education, grades, and participants' performance combine to influence the behavioral choices one makes. Furthermore, one's culturally-assumed perception of the meaning of grades can affect whether the student approaches the effort required to earn a grade as collaborative or competitive. These different roles influence not only one's perspective as a participant but also one's performance as a participant in the process.

Pedagogical Implications

The findings of this study invite a conversation regarding at least two pedagogical implications addressed below. The first addresses the difficult situation facing instructors that stems from the findings of this study. The second offers a possible solution or at least a practice that may serve to reduce the negative effects discussed in the first implication.

The effects of grades on state self-esteem put professors in an unappealing situation. Although the analysis is limited by the nature of the study, the results indicate students have a lowered state self-esteem if they receive a grade other than an A. This effect is neither attractive to an educator nor ideal for a student. Lowering state self-esteem seems to be not only counterintuitive but counterproductive to the educational process. Creating an environment where students can and are willing to learn when they are communicated with in such a way that lowers state self-esteem seems an unattractive option. Creating this kind of environment forces professors into a lose-lose situation. Students who earn grades lower than an A will lose self-esteem, thus making the job of the professor even more difficult. If all the grades the professor awards are A's or even B's, grade inflation occurs and the integrity of the academic endeavor suffers. Professors are seemingly faced with the dilemma of negatively affecting student state self-esteem versus negatively affecting the integrity of academia.

The results of the study indicated student state self-esteem is negatively affected when a student receives any grade other than an A. This study did not include the effects of a student receiving a grade of B or D, only A, C, or F. Since student state self-esteem is negatively affected when receiving a C or F, the result would likely be

the same if the student were to receive a grade of D. What is less clear is the effect on state self-esteem when receiving a grade of B. Follow-up research needs to study the effects of receiving a grade of B to further understand its effects on student state self-esteem. Other future studies should strive to identify participants whose state self-esteem is not affected in the same way as those in this study. Certainly there are students whose state self-esteem actually increases when earning lower grades (e.g. C, D, or F). Qualitative interviews can help identify how professors can avoid the negative effects of lower grades on state self-esteem.

A second pedagogical implication is more of a possible solution to the dilemma outlined above. Student understanding of the quality of their performance is based, at least in part, on the interaction of the grade they receive and the grades they hear other students reporting, which are likely inflated at times, as this study concluded. If students were armed with information that challenges his/her understanding of how others performed, other than relying of self-reports of grades from others, the effects on state self-esteem directly resulting from grades may be reduced. Students evaluate their performance based on the grade they receive and the grades they are told others receive but receiving information about the performance of others from a different source could affect one's understanding of the meaning assigned to the grade they received, thus affecting state self-esteem differently. Thus, professors can offer grade-related information that can counter the over-inflated grades a student learns others earned.

Prior to returning grades to students, if a professor were to report a simple grade distribution and/or average of the class' grades, that information could serve to

offer a more realistic option of comparison for individual students than relying on the self-reporting practice of the status quo. If a student knows the number of students who earned an A or B, when engaging in student benchmarking communication, he/she may be less likely confronted with, or at least more critical of, information that leads him/her to believe most others earned such high grades. Further research needs to be conducted to study the effects of instructor disclosed grade results.

CHAPTER 5

LIMITATIONS AND FUTURE DIRECTIONS

This study generated some important and interesting findings; however, like all studies, it contains some limitations that must be recognized so that they can guide future research related to student-student communication. Specifically, two limitations are described below as a means of reflecting on where future investigations of student-student communication should proceed: (a) the limitation inherent in an experimental study and (b) the lack of understanding or explanation of the contextual role the single exam from the hypothetical narrative scenario served. Finally, future directions are addressed as a need to further study the meaning-making process concerning grades is apparent. Future research needs to be directed at the meaning of grades and the interpretation of meaning students and professors assign to grades.

Limitations

The first limitation of this study is that it was experimental in nature. Therefore, like all experiments, it sacrificed a degree of external validity to gain internal control (Keyton, 2006; Creswell, 2003). Students were asked to read a hypothetical narrative scenario and then asked to disclose how they would respond in that hypothetical situation. The large variety of possibilities makes the realism of the scenario questionable. For example, the narrative strictly required all three other peers to receive the same exact grade, which is only one of a myriad of grade result possibilities the student is required to ignore. Also, the student is forced to respond by disclosing the grade they would report when asked. This limits the opportunity to offer a response that does not disclose a grade, through equivocation or avoiding an answer

altogether, which were not options available to participants. Arguably, avoiding or equivocating may or may not be considered deceptive responses, responses this study does not consider in its design. If a student is asked to report his/her grade, the response may be to simply avoid the question and not provide a grade to those asking. Likewise, the student may offer a response of equivocation in which those asking do not receive a definitive answer. It is unclear if either of these responses would be considered deceptive as an answer revealing the student's grade is not provided, yet the student never responds with explicitly false or untrue information. Additionally, the student responses are predictive in nature, meaning students are asked how they *would* respond if put in the situation described by the narrative scenario. This predicted behavior could be completely different than one's actual behavior or response when put in a similar communicative exchange. It is unclear if students' deception would be similar to the results of this experiment or if they would engage in more or less deception in their responses if faced with a similar, real-life situation similar to the hypothetical scenario in the study. Follow-up research should focus on retrospective narrative experiences of actual situations similar to the narrative scenario instead of placing students in a hypothetical situation.

The second limitation of this study is a lack of understanding of the context of the exam grade the students' discussed. The study did not reveal an effect on motivation or state self-esteem based on the communication of grades of a recently completed exam but instead effects were found based only on the grade received. What is unclear is the context of the exam in question. If a better understanding of the meaning of the exam is understood, it may be more clearly determined if

communicating about the grade received on that exam affects motivation and/or state self-esteem. For example, if a student is discussing their grade on a midterm where the next exam in question is the final exam or the only other opportunity to affect one's grade in the course, a different effect on motivation or state self-esteem may be detected. Also, if the course consists of a series of exams coupled with other alternative assignments that contribute to the final grade in a course, there would be a different context as to the value of the exam, thus possibly resulting in a different effect on motivation and/or state self-esteem. Future research should aim to contextualize clearly an assignment's overall influence on one's final course grade when measuring the effects of that single assignment.

Future Directions

In an effort to better understand the effects of the grade comparison process between students, it is necessary to first understand grade meaning. Do students and professors differ systematically in their understanding of what grades represent, and if so, how? A grade having objective, subjective, and simultaneously objective and subjective meaning is an idea advanced in the discussion of this study. Future research needs to address the function, role, and meaning of grades to students and professors in order to better understand the effects of grades. Next, as discussed in the pedagogical implication section previously, further study is warranted to better understand the effects of grade communication by students and professors alike. Specifically, what effect will grade disclosure from a professor concerning an entire class' grade distribution on an assignment have on the how students interpret the meaning of grades and whether message construction is also affected. Finally, while

Social Comparison Theory was used as the theoretical framework in designing this study, perhaps alternate theories may be more appropriate in explaining the findings of this study. For example, theories such as Heider's (1958) Attribution Theory may better explain the motivation to deceive when reporting one's grade to peers. Students may attribute a lower score on an exam to outside causes, such as an exam being unfairly difficult or personal bias by the professor about the student's quality of work, thus resulting in a student's decision to deceive and report receiving a better grade than actually received as a way to mitigate this belief of unfair treatment. Attribution Theory may provide insight into why students choose to deceive and should be considered in future studies.

In conclusion, this study provides initial information of the occurrence of student-to-student communication through a systematic collection of descriptive information. This descriptive information addresses, in part, the often heard call for more studies about the communication that occurs between and among students (e.g., Kennedy-Lightsey & Myers, 2009; Fassinger, 1995; Johnson, 1981). The results of this study found college students frequently discuss with other students information that is directly related to the courses in which they are enrolled, including but not limited to, the grades they receive in their classes. This study also indicates the grade a student receives affects his or her motivation to prepare for a future exam and state self-esteem. This study further suggests some students may deceptively report to peers the grade they received when discussing grade performance on assignments such as exams, especially when the student received a low grade. Educators should focus on the opportunity to utilize the communication events that occur between and among

students. Instructional practices can be employed to not only mitigate the negative effects on student motivation and state self-esteem in an effort to retain the attention of and engage enrolled students, but also to reduce the impact of grade discussion among them.

REFERENCES

Allen, M., & Bourhis, J. (1996). The relationship of communication apprehension to communication behavior: A meta-analysis. *Communication Quarterly, 44,* 214-216. doi:10.1080/01463379609370011

Allen, M., Witt, P. L., & Wheeless, L. R. (2006). The role of teacher immediacy as a motivational factor in student learning: using meta-analysis to test a casual model. *Communication Education, 55,* 21-31. doi:10.1080/03634520500343368

Anderman, L. H., & Kaplan, A. (2008). The role of interpersonal relationships in student motivation: Introduction to the special issue. *Journal of Experimental Education, 76,* 115-119. doi:10.3200/JEXE.76.2.115-120

Banfield, S. R., Richmond, V. P., & McCroskey, J. C. (2006). The effect of teacher misbehaviors on teacher credibility and affect for the teacher. *Communication Education, 5,* 63-72. doi:10.1080/03634520500343400

Battistich, V., Solomon, D., & Delucchi, K. (1993). Interaction processes and student outcomes in cooperative learning groups. *Elementary School Journal, 94,* 19-32. doi:10.1086/461748

Baxter, L. A. (1984). An investigation of compliance-gaining as politeness. *Human Communication Research, 10,* 427-456. doi:10.1111/j.1468-2958.1984.tb00026

Beatty, M. J. (2004). Student motivation scale. In R. B. Rubin, P. Palmgreen, & H. E. Sypher (Eds.), *Communication research measures: A sourcebook* (pp. 343-346). Mahwah, NJ: Erlbaum.

Berndt. T. J., & Keefe, K. (1995). Friends' influence on adolescents' adjustment to school. *Child Development, 66,* 1312-1329. doi:10.1111/1467-8624.ep9510075265

Blanton, H., Buunk, B. P., Gibbons, F. X., & Kuyper, H. (1999). When better-than-others compare upward: Choice of comparison and comparative evaluation as independent predictors of academic performance. *Journal of Personality and Social Psychology, 76,* 420-430. doi:10.1037/0022-3514.76.3.420

Brown, P. & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. New York: Cambridge University Press.

Bui, K. V. T., & Pelham, B. W. (1999). Cognitive and affective reactions to social comparison. *Journal of Social Behavior and Personality, 14*, 569–583.

Buunk, B. P., Kuyper, H., & van der Zee, Y. G. (2005). Affective response to social comparison in the classroom. *Basic and Applied Social Psychology, 27*, 229-237. doi:10.1207/s15324834basp2703_4

Chesebro, J. L. (2003). Effects of teacher clarity and nonverbal immediacy on student learning, receiver apprehension, and affect. *Communication Education, 52*, 135-147. doi:103.1080/0363452032000085108

Christophel, D. M. (1990). The relationships among teacher immediacy behaviors, student motivation, and learning. *Communication Education, 39,* 323-340. doi:10.1080/03634529009378813

Christohphel, D. M., & Gorham, J. (1995). A test-retest analysis of student motivation, teacher immediacy, and perceived sources of motivation and demotivation in college classes. *Communication Education, 44,* 292-306. doi:10.1080/03634529509379020

Chudgar, A., & Sandar, V. (2008). The relationship between teacher gender and student achievement: Evidence from five Indian states. *Compare, 38,* 627-642. doi:10.1080/03057920802351465

Covington, M. V. (1984). The motive for self-worth. In R. Ames & C. Ames (Eds.), *Research on motivation in education: Student motivation* (pp. 77-113). New York: Academic Press.

Craig, R. T., Tracy, K., & Spisak, F. (1986). The discourse of requests: Assessment of a politeness approach. *Human Communication Research, 12,* 437-468.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage

Cupach, W. R. & Metts, S. (1994). *Facework*. Thousand Oaks, CA: Sage

Dijkstra, P., Kuyper, H., van der Werf, G., Buunk, A. P., & van der Zee, Y. G. (2008). Social comparison in the classroom: A review. *Review of Educational Research, 78,* 828-879. doi:10.3102/0034654308321210

Downs, V. C., Javidi, M., & Nussbaum, J. F. (1988). An analysis of teachers' verbal communication within the college classroom: Use of humor, self-disclosure, and narratives. *Communication Education, 37,* 127-141. doi:10.1080/03634528809378710

Ellis, K. (2004). The impact of perceived teacher confirmation on receiver apprehension, motivation, and learning. *Communication Education, 53,* 1-20. doi:10.10/03634520320000135742

Fassinger, P. A. (1995). Understanding classroom interaction. *Journal of Higher Education,* 66(1), 82-96.

Feldman, K. A. (1976). The superior college teacher from the students' view. *Research in Higher Education, 5,* 243-288. doi:10.1007/BF00991967

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117-40. doi:10.1177/001872675400700202

Fortney, S. D., Johnson, D. I., & Long, K. M. (2001). The impact of compulsive communicators on the self-perceived competence of classroom peers: An investigation and test of instructional strategies. *Communication Education, 50,* 357-373. doi:10.1080/03634520109379261

Frymier, A. B., & Weser, B. (2001). The role of student predispositions on student expectations for instructor communication behavior. *Communication Education, 50,* 314-326. doi:10.1080/03634520109379258

Goffman, E. (1959). *The presentation of self in everyday life*. Garden City, NY: Doubleday.

Haleta, L. L. (1996). Student perceptions of teachers' use of language: The effects of powerful and powerless language on impression formation and uncertainty. *Communication Education, 45,* 16-28. doi:10.1080/03634529609379029

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology, 60*, 895-910. doi:10.1037/0022-3514.60.6.895

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley

Hodgins, H. S., Liebeskind, E., & Schwartz, W. (1996). Getting out of hot water: Facework in social predicaments. *Journal of Personality and Social Psychology*, *71*, 300-314. doi:10.1037/0022-3514.71.2.300

Huguet, P., Dumas, F., Monteil, J. M., & Genestoux, N. (2001). Social comparison choices in the classroom: Further evidence for students' upward comparison tendency and its beneficial impact on performance. *European Journal of Social Psychology*, *31*, 557-578. doi:10.1002/ejsp.81

Isobe, C. & Ura, M. (2006). Effects of intergroup upward comparison, trait self-esteem, and identity shift on state self-esteem and affect in upward comparison with in-group members. *Asian Journal of Social Psychology, 9,* 50-58. doi: 10.1111/j.1367-2223.2006.00171.x

Johnson, D. W. (1981). Student-student interaction: The neglected variable in education. *Educational Researcher, 10*(1), 5-10.

Jones, M. G., & Wheatley, J. (1990). Gender differences in teacher-student interactions in science classrooms. *Journal of Research in Science Teaching*, *27*, 861-874. doi:10.1002/tea.3660270906

Katt, J. A., McCrosky, J. C., Sivo, S. A., Richmond, V. P., & Valencic, K. M. (2009). A structural equation modeling evaluation of the general model of instructional communication. *Communication Quarterly, 57*, 239-258. DOI: 10.1080/01463370903107196

Kearney, P., Plax, T. G., Hays, E. R., & Ivey, M. J. (1991). College teacher misbehaviors: What students don't like about what teachers say and do. *Communication Quarterly*, *39*, 309-324. doi:1 0.1080/01463379109369808

Kennedy-Lightsey, C. D., & Myers, S. A. (2009). College students' use of behavioral alteration techniques as a function of aggressive communication. *Communication Education*, *58*, 54-73. doi:10.1080/03634520802272299

Keyton, J. (2006). *Communication research: Asking questions, finding answers*. Boston: McGraw Hill.

Kohn, A. (2002, November 8). The dangerous myth of grade inflation. *The Chronicle of Higher Education*, *49*(11), p. B7-9.

Kunkel, A. D., Wilson, S. R., Olufowote, J., & Robson, S. (2003). Identity implications of influence goals: Initiating, intensifying, and ending romantic relationships. *Western Journal of Communication, 67*, 382-412. doi: 10.1080/10570310309374780

Lannutti, P. J., & Strauman, E. C. (2006). Classroom communication: The influence of instructor self-disclosure on student evaluations. *Communication Quarterly*, *54*, 89-99. doi:10.1080/01463370500270496

Leary, M. R. (1999). Making sense of self-esteem. *Current Directions in Psychological Science, 8*, 32-35. doi:10.1111/1467-8721.00008

Levine, J. M. (1983). Social comparison and education. In *Teacher and Student Perceptions: Implications for Learning*, J. M. Levine & M. C. Wang (Eds). Hillsdale, NJ: Erlbaum.

Mansfield, H. C. (2001, April 6). Grade inflation: It's time to face the facts. *The Chronicle of Higher Education, 47*(30), p. B24.

McCroskey, J. C., Richmond, V. P., & Bennet. V. E. (2006). The relationships of student end-of-class motivation with teacher communication behaviors and instructional outcomes. *Communication Education, 55,* 403-414. doi:10.1080/03634520600702562

McCroskey, J. C., Valencic, K. M., & Richmond, V. P. (2004). Toward a general model of instructional communication. *Communication Quarterly, 52,* 197-210. doi:10.1080/01463370409370192

McLaughlin, M. L., Cody, M. J., & O'Hair, H. D. (1983). The management of failure events: Some contextual determinants of accounting behavior. *Human Communication Research, 9,* 208-224. doi:10.1111/j.1468-2958.1983.tb00695

McNary, L. D. (1994). Thinking about excellence and benchmarking. *Journal for Quality and Participation, 17*(4), 90.

Miller, P. W. (2005). Body language in the classroom. *Techniques, 80(*8), 28-30.

Morand, D. A. (2000). Language and power: An empirical analysis of linguistic strategies used in superior-subordinate communication. *Journal of Organizational Behavior, 21,* 235-248.

Moriarty, J. P., & Smallman, C. (2009). En route to a theory of benchmarking. *Benchmarking: An International Journal, 16*, 484-503. doi:10.1108/14635770910972423

Mottet, T. P., Richmond, V. P., & McCroskey, J. C. (Eds.) (2006). *Handbook of instructional communication: Rhetorical and relational perspectives*. Boston: Pearson.

Nussbaum, J. F. (1992). Effective teacher behaviors. *Communication Education, 41*, 167-180. doi:10.1080/03634529209378878

O'Banion, T. (1997). *A learning college for the 21st century*. Phoenix, AZ: Oryx Press

O'Brien, E. J. (1985). Global self-esteem scales: Unidimensional or multidimensional? *Psychological Reports, 57*, 383-389.

Penman, R. (1990). Facework and politness: Multiple goals in courtroom discourse. *Journal of Language and Social Psychology, 9*, 15-38. doi: 10.1177.0261927X9091002

Pleban, R., & Tesser, A. (1981). The effects of relevance and quality of another's performance on interpersonal closeness. *Social Psychology Quarterly, 44*, 278-285. doi:10.2307/3033841

Pogue, L. L., & AhYun, K. (2006). The effect of teacher nonverbal immediacy and credibility on student motivation and affective learning. *Communication Education, 55,* 331-344. doi:10.1080/03634520600748623

Potter, W. J., & Emmanuel, R. (1990). Students' preferences for communication styles and their relationship to achievement. *Communication Education, 39*, 234-249. doi:10.1080/03634529009378805

Rocca, K. A. (2004). College student attendance: Impact of instructor immediacy and verbal aggression. *Communication Education, 53,* 185-195. doi:10.10/03634520410001682447

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and specific self-esteem: Different concepts, different outcomes. *American Sociological Review, 60,* 141-156. doi:10.2307/2096350

Rubin, M., & Hewstone, M. (1998). Social identity theory's self-esteem hypothesis: A review and some suggestions for clarification. *Personality and Social Psychology Review, 2,* 40-62. doi:10.1207/s15327957pspr0201_3

Russo, T. C., & Koesten, J. (2005). Prestige, centrality, and learning: A social network analysis of an online class. *Communication Education, 54,* 254-261. doi:10.1080/03634520500356394

Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development, 72,* 1135-1150. doi:10.1111/1467-8624.00338

Seifert, T. L. (2004). Understanding student motivation. *Educational Research, 46,* 137-149. doi:10.1080/0013188042000222421

Sidelinger, R. J., & McCroskey, J. C. (1997). Communication correlates of teacher clarity in the college classroom. *Communication Research Reports, 14,* 1-10. doi:10.1080/08824099709388640

Sime, D. (2006). What do learners make of teachers' gestures in the language classroom? *International Review of Applied Linguistics in Language Teaching, 44,* 211-230. doi:10.1515/IRAL.2006.009

Smith, R. A., & Peterson, B. L. (2007). "Psst… What do you think?" The relationship between advice prestige, type of advice, and academic performance. *Communication Education, 56*, 278-291. doi:10.1080/03634520701364890

Sonner, B. S. (2000). A is for "adjunct": Examining grade inflation in higher education. *Journal of Education for Business, 76*, 5-8.

Stacks, D. (2005). Benchmarking. In R. L. Heath, (Ed.), *Encyclopedia of Public Relations* (pp. 74-76). Thousand Oaks, CA: Sage.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, (Vol. 21, pp. 181-227). New York: Academic Press.

Tesser, A., & Campbell, J. (1982). Self-evaluation maintenance and the perception of friends and strangers. *Journal of Personality, 50*, 261-279. doi:10.1111/1467-6494.ep7379368

Tesser, A., & Campbell, J. (1983). Self-definition and self-evaluation maintenance. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives* (Vol. 2, pp 1-31). Hillsdale, NJ: Erlbaum

Thweatt, K. S., & McCroskey, J. C. (1998). The impact of teacher immediacy and misbehaviors on teacher credibility. *Communication Education, 47*, 348-358. doi:10.1080/03634529809379141

Wanzer, M. B., & Frymier, A. B. (1999). The relationship between student perceptions of instructor humor and students' reports of learning. *Communication Education, 48*, 48-62. doi:10.1080/03634529909379152

Wilson, S. R., Aleman, C. G., & Leatham, G. B. (1998). Identity implications of influence goals: A revised analysis of face-threatening acts and application to seeking compliance with same-sex friends. *Human Communication Research*, *25*, 64-96. doi: 10.1111/j.1468-2958.1998.tb00437.x

Wilson, S. R., Kunkel, A. D., Robson, S. J., Olufowote, J. O., & Soliz, J. (2009). Identity implications of relationship (re)definition goals: An analysis of face threats and facework as young adults initiate, intensify, and disengage from romantic relationships. *Journal of Language and Social Psychology*, *28*, 32-61. doi: 10.177/0261927X08325746

Webb, N. M. (1982). Student interaction and learning in small groups. *Review of Educational Research*, *52*, 421-445. doi:10.3102/00346543052003421

Witt, P. L., & Schrodt, P. (2006). The influence of instructional technology use and teacher immediacy on student affect for teacher and course. *Communication Reports*, *19*, 1-15. doi:10.1080/08934210500309843

Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, *106*, 231-248. doi:10.1037/0033-2909.106.2.231

APPENDICES

APPENDIX 1

DEMOGRAPHIC QUESTIONNAIRE

What is your OU 4X4

What is your classification?

- ❍ Freshman
- ❍ Sophomore
- ❍ Junior
- ❍ Senior
- ❍ Graduate Student
- ❍ Other

What is your sex?

- ❍ Male
- ❍ Female

What is your primary ethnicity? (Please choose one)

- ❍ Asian/Asian American
- ❍ Black/African American
- ❍ Latino/Hispanic
- ❍ Middle Eastern
- ❍ Native American
- ❍ West Indian
- ❍ White/Non-Hispanic
- ❍ Other (please specify) _____

What is your age?

What is your college major or intended major?

What is your overall GPA?

What is your approximate GPA in your major?

APPENDIX 2-A

STUDENT-STUDENT COMMUNICATION (WHEN AND WITH WHOM)

When do you most frequently communicate with your fellow classmates? (check only one)

- ❍ Immediately before class
- ❍ During class
- ❍ Immediately after class
- ❍ Several hours before class
- ❍ Several hours after class
- ❍ On days when class does not meet

With whom do you most frequently communicate concerning class/course topics? (check only one)

- ❍ Close friend(s) currently enrolled in my class
- ❍ Close friend(s) not currently in my class
- ❍ Acquaintance(s) currently enrolled in my class
- ❍ Acquaintance(s) not currently enrolled in my class
- ❍ Stranger(s) enrolled in my class
- ❍ Stranger(s) not enrolled in my class

APPENDIX 2-B

STUDENT-STUDENT COMMUNICATION FREQUENCY SCALE

Please answer the following questions:

	Never	Rarely	On Occasion	Fairly Often	Very Often
How often do you communicate with close friends in your class about class/course related topics?	❍	❍	❍	❍	❍
How often do you communicate with acquaintances in your class about class/course related topics?	❍	❍	❍	❍	❍
How often do you communicate with strangers in your class about class/course related topics?	❍	❍	❍	❍	❍
How often do you share/disclose information with fellow students) about a class in which you are currently enrolled?	❍	❍	❍	❍	❍
How often do you seek information from fellow students about a course you are currently taking?	❍	❍	❍	❍	❍
How often are you asked to share/disclose information with fellow students about a course you are enrolled in together?	❍	❍	❍	❍	❍
How often do you discuss grades with other students?	❍	❍	❍	❍	❍

APPENDIX 3

SCENARIO NARRATIVES

You and three close friends are currently enrolled in the same class. You often hang out with these friends outside of class. All four of you have the same major and decided to enroll in this required major class together. In the past, all four of you have taken classes together and you know that the four of you almost always receive similar grades.

You recently completed an exam in that class. The professor begins returning exam grades to students. As you wait for your score, you begin thinking about the exam. Your anxiety begins to build. This class is important to you as it is one of the classes required for your major. You're thinking about how hard you studied because you want to do very well in the class. Your name is called by your professor as you are handed your graded exam. You look at the score on the exam to learn you received an A.

After class you and your three friends from class discuss how each of you did on the exam. During the discussion, your friends reveal how they did on the exam. "I got an A on the exam" one of your friends says. "Hey, I also got an A" says your second friend. "Isn't that something, I got an A too!" says your third friend. All three of them received the same grade!

Knowing what you earned and what your three friends earned on the exam, please complete the following questions.

You and three close friends are currently enrolled in the same class. You often hang out with these friends outside of class. All four of you have the same major and decided to enroll in this required major class together. In the past, all four of you have taken classes together and you know that the four of you almost always receive similar grades.

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Knowing what you earned and what your three friends earned on the exam, please complete the following questions.

You and three schoolmates are currently enrolled in the same class. You never hang out with these schoolmates outside of class. This class is a requirement in each of your respective majors. In the past, you have been enrolled in classes with these same three schoolmates and you are pretty certain that all four of you almost always received similar grades.

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Knowing what you earned and what your three schoolmates earned on the exam, please complete the following questions.

APPENDIX 4

STUDENT MOTIVATION SCALE
BEATTY, 2004

Instructions: Based on the scenario you just read, please mark the circle between the two words on each line that best represents how you feel about preparing for the next exam in the class you just read about.

1	Motivated	❍	❍	❍	❍	❍	❍	❍	Unmotivated
2	Interested	❍	❍	❍	❍	❍	❍	❍	Uninterested
3	Involved	❍	❍	❍	❍	❍	❍	❍	Uninvolved
4	Not stimulated	❍	❍	❍	❍	❍	❍	❍	Stimulated
5	Don't want to study	❍	❍	❍	❍	❍	❍	❍	Want to study
6	Inspired	❍	❍	❍	❍	❍	❍	❍	Uninspired
7	Unchallenged	❍	❍	❍	❍	❍	❍	❍	Challenged
8	Uninvigorated	❍	❍	❍	❍	❍	❍	❍	Invigorated
9	Unenthused	❍	❍	❍	❍	❍	❍	❍	Enthused
10	Excited	❍	❍	❍	❍	❍	❍	❍	Not excited
11	Aroused	❍	❍	❍	❍	❍	❍	❍	Not aroused
12	Not fascinated	❍	❍	❍	❍	❍	❍	❍	Fascinated
13	Dreading it	❍	❍	❍	❍	❍	❍	❍	Looking forward to it
14	Important	❍	❍	❍	❍	❍	❍	❍	Unimportant
15	Useful	❍	❍	❍	❍	❍	❍	❍	Useless
16	Helpful	❍	❍	❍	❍	❍	❍	❍	Harmful

APPENDIX 5
STATE SELF-ESTEEM SCALE (PERFORMANCE)
HEATHERTON & POLIVY, 1991

Instructions: Again, visualizing yourself *as part of the scenario you just read*, please mark the circle under the answer that best represents how you currently feel.

		Never	Rarely	On Occasion	Fairly Often	Very Often
1	I feel confident about my abilities.	❍	❍	❍	❍	❍
2	I am worried about whether I am regarded as a success or failure.	❍	❍	❍	❍	❍
3	I feel frustrated or rattled about my performance.	❍	❍	❍	❍	❍
4	I feel that I am having trouble understanding things that I read.	❍	❍	❍	❍	❍
5	I feel self-conscious.	❍	❍	❍	❍	❍
6	I feel as smart as others.	❍	❍	❍	❍	❍
7	I feel displeased with myself.	❍	❍	❍	❍	❍
8	I am worried about what other people think of me.	❍	❍	❍	❍	❍
9	I feel confident that I understand things.	❍	❍	❍	❍	❍
10	I feel inferior to others at this moment.	❍	❍	❍	❍	❍
11	I feel concerned about the impression I am making.	❍	❍	❍	❍	❍
12	I feel that I have less scholastic ability right now than others.	❍	❍	❍	❍	❍
13	I feel like I'm not doing well.	❍	❍	❍	❍	❍
14	I am worried about looking foolish.	❍	❍	❍	❍	❍

APPENDIX 6

GRADE RESPONSE QUESTION

Based on the scenario you just read, if the three individuals asked you how you did on the exam, your response would be _____? (choose only one)

- ❍ "I got a high A"
- ❍ "I got an A"
- ❍ "I got a low A"
- ❍ "I got a high B"
- ❍ "I got a B"
- ❍ "I got a low B"
- ❍ "I got a high C"
- ❍ "I got a C"
- ❍ "I got a low C"
- ❍ "I got a high D"
- ❍ "I got a D"
- ❍ "I got a low D"
- ❍ "I got a high F"
- ❍ "I got an F"
- ❍ "I got a low F"

APPENDIX 7

DECEPTION SCORING

	Scenario Value	Response Value
High A		15
A	-14	14
Low A		13
High B		12
B		11
Low B		10
High C		9
C	-8	8
Low C		7
High D		6
D		5
Low D		4
High F		3
F	-2	2
Low F		1