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Shannon Scielzo  
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THE EFFECTS OF TRAINING ON GOAL ORIENTATION, MENTORING RELATIONSHIP  
PROCESSES, AND OUTCOMES

by

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A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the Department of Psychology  
in the College of Sciences  
at the University of Central Florida  
Orlando, Florida

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Major Professor: Kimberly A. Smith-Jentsch

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## ABSTRACT

The purpose of the current study was to examine the effectiveness of preparatory training for mentors and protégés with respect to relationship processes and outcomes. Specifically, it was proposed that training provided to mentors and their protégés should foster a high learning goal orientation and a low avoid goal orientation. The former is associated with learning for the sake of continuous improvement and the latter is associated with a willingness to be perceived by others as having failed at a task. It was hypothesized that mentors and protégés who received goal orientation training prior to beginning their formal mentoring sessions would engage in greater feedback-seeking and would be more willing to self-disclose potentially ego-threatening information. Moreover, it was expected that training would also lead participants to expect such behaviors from their partners and as a result respond more positively when the desired behaviors were demonstrated.

Eighty (i.e., first and second semester freshmen) were paired with eighty mentors (i.e., college juniors and seniors with a minimum grade point average of 3.0), resulting in a total of 160 study participants. All participants received one hour of preparatory training. A two by two factorial design was employed whereby mentors and protégés each received either goal orientation training or training simply designed to orient them to computer-mediated communication. After training, mentors and protégés met with one another using online chat for four, 30-minute weekly chat sessions. Results indicated that a) protégés in a high state of avoid goal orientation felt they received less psychosocial support the more their mentor disclosed his/her own personal downfalls, b) mentors who received goal orientation training felt they had provided greater career support the more their protégés sought feedback but the reverse was true for mentors who did not receive goal orientation training, c) mentor self-disclosure was more

strongly related to their protégé's self-disclosure if the protégé had received goal orientation training, and finally d) mentor and protégé perceptions of the psychosocial and career support that had been provided/received during online sessions were more strongly correlated if the two had received the same type of preparatory training (especially if both received goal orientation training).

## DEDICATION

I would like to dedicate this dissertation to several individuals, whom I could not have finished this incredible project without their presence in my lives.

The first individual, my advisor, mentor, and friend, Kimberly A. Smith-Jentsch, has had an amazing impact not only on my academic career, but also helped me through incredible personal obstacles that I faced during the course of my graduate career. Without her support, I am certain that I would have not have been able to succeed as I have.

Secondly, my wonderful husband, Sandro Scielzo, has served as a great source of support completing this dissertation. And, I will forever be in debt to him for his loving support completing this project (and forgiveness during the period preparing for comprehensive exams - this really merits no further explanation for anyone who has gone through this process).

And finally, but of no less importance, my daughter, Jade Amerilda Irving-Scielzo. Although Jade is rightfully the center of my universe, she has had to ‘share’ mommy with the many tasks required of obtaining this degree. She was a major impetus for my decision to undertake this challenge, and a constant motivator in my plight to finish this degree.

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## CHAPTER ONE: INTRODUCTION

### Statement of the Problem

Attaining the necessary skills for success and advancement can sometimes present itself as a daunting task in an ever-changing, fast-paced society that does not necessarily wait for individuals to catch up. Organizations employing new individuals frequently assume that these employees will learn the necessary skills through practice on the job (e.g., Marley, 2007; Stewart, 2007). Universities and colleges often also assume that students new to college life come equipped with what they need for success (Rosenbaum, 2007; Toth & Motagna, 2002). However, individuals do not always know nor understand what can be done to remediate and/or improve themselves. Mentoring may be one such mechanism that allows for individuals to increase their probabilities for success and to remediate any deficiencies that are present.

Mentoring is generally defined as any relationship in which a more senior individual helps to develop a less senior individual (Kram, 1985; Levinson, Darrow, Klein, Levinson, & McKee, 1978), and has been associated with numerous positive outcomes for recipients of such relationships. Specifically, a ‘mentor’ is the more senior person in the relationship whereas the ‘protégé’ is the less senior individual who most often is expected to benefit from the relationship. However, mentors may also stand to benefit from these relationships (Bozionelos, 2004).

Although a great deal of research has demonstrated the positive effects attainable from such relationships (e.g., Allen, Eby, Poteet, Lentz, & Lima, 2004; Underhill, 2006), little is known regarding how to maximize such relationships. Many have posited the potential benefits of implementing training to prepare mentors and their protégés for their roles (e.g., Johnson, 2002; Tang & Choi, 2005), and many others have even attempted to provide some form of

training, however little is understood yet regarding why or why not some of these training programs have been effective. One of the few studies that examined training and mentoring relationship outcomes, Allen, Eby, and Lentz (2006) found that both reported mentor and protégé reported training quality related to their perceptions of mentorship quality. Still, the question of what constitutes quality in regards to training in preparation for mentoring remains. It is likely that high quality preparatory mentoring training provides individuals with reasonable expectations regarding what should occur during the course of the relationship. Training may also help to emphasize important objectives, and to also provide individuals the necessary skills to be successful in such relationships (Allen et al., 2006; Burke & McKeen, 1989, Kram 1985).

Previous research in other similar situations has been found to help in the development of interpersonal relationships, such as for individuals undertaking marital counseling. As argued by Allen and colleagues (2006), these findings are likely attributable to increased personal disclosure and also improved communication. Mentoring relationships are complex interpersonal relationships, in which both mentors and protégés alike stand to gain valuable skills (Bozionelos, 2004). Furthermore, individuals might actually suffer negative consequences in some instances if the relationship is not successful (Eby & Allen, 2002). Thus, it stands to reason that we should adequately prepare individuals for undertaking these relationships. However, although the potential implications of training on mentoring relationship success are advocated by innumerable individuals (e.g., Allen et al., 2006; Kram, 1985), there is a relative lack of research in this area. Thus, it is not understood whether or not training is effective in the context of mentoring specifically, what should be trained in order to adequately prepare individuals for their mentoring relationships, and finally, who should be trained (i.e., just the mentor, just the protégé, or both?).

One possible way to facilitate training, might be through manipulation of goal orientation states. Goal orientation, in general terms, refers to the way in which individuals approach new achievement situations (Payne, Youngcourt, & Beaubien, 2007; Salas & Cannon-Bowers, 2001). Goal orientation originated in the educational sector as a mechanism for explaining the differences in the way that children approached learning tasks (Dweck, 1986; Eisen, 1979, 1981). It is currently recognized as being comprised of three sub-factors: (a) learning goal orientation, (b) prove goal orientation, and (c) avoid goal orientation (c.f., Elliot, 1994; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; VandeWalle, 1993, 1996, & 1997).

Individuals with a stronger *learning goal orientation* tend to be more motivated to learn for the sake of learning. The stronger individuals' *prove goal orientation*, the more motivated they are to demonstrate their ability and competence to others. Finally, individuals with an *avoid goal orientation* prefer to avoid situations in which failure might be plausible. It is important to note that although some of these behaviors seem to represent different ends of a continuum, these three constructs are distinct and all contribute uniquely in various learning contexts (Payne, et al., 2007). Moreover, learning goal orientation has consistently been found to be a positive predictor of learning processes and outcomes, whereas avoid goal orientation has generally been negatively related to these variables. Prove orientation has more mixed results, tending to interact with contextual variables when relationships are present. Thus, prove will not be included for the purposes of the current study (c.f., Payne et al., 2007).

One explicit opportunity to examine the effects of goal orientation, namely in regard to mentoring relationships, may present difficult situations for both the mentor and the protégé, requiring that both are ready to address uncomfortable and challenging situations (Johnson, 2002; Tang & Choi, 2005). In turn, individuals with a *high* learning goal orientation and *low*



avoid goal orientation will likely be the most successful at this task. A handful of studies (Egan, 2005; Godshalk & Sosik, 2002; Smith-Jentsch, Singleton, & Feldman, 2007; Sosik, Godshalk, & Yammarino, 2004) have recently found that trait goal orientation does affect mentoring relationships.

Although goal orientation has traditionally been recognized as a trait, which assumes that it is a relatively stable disposition, several researchers have recently reported that states of goal orientation can be induced (e.g., Breland & Donovan, 2005; Dragoni, 2005; Kozlowski & Bell, 2006; Stevens & Gist, 1997). Thus, it is likely that an overall trait does exist, but that specific environmental or task cues likely can modify that initial tendency. Thus, in the current study, it is hoped that a mentoring training program specifically designed to teach participants regarding goal orientation and allow for practice using their newly learned skill, will elicit desired states of goal orientation. In turn, more effective mentoring processes and outcomes should be achieved.

It is proposed that the training will affect both mentor and protégé behaviors. Furthermore, it is believed that training will affect the way in which mentors and protégés will react to one another's behaviors. Specifically, individuals will perceive the other's partners behaviors differently due to the expectations set from the preparatory training, and subsequently mentoring relationship outcomes will be affected. See Figure 1 for the overarching conceptual model tested in this study, and see Figures 2 – 5 for the specific proposed relationships in this study. The specific purposes of the current study will be discussed in the subsequent section.

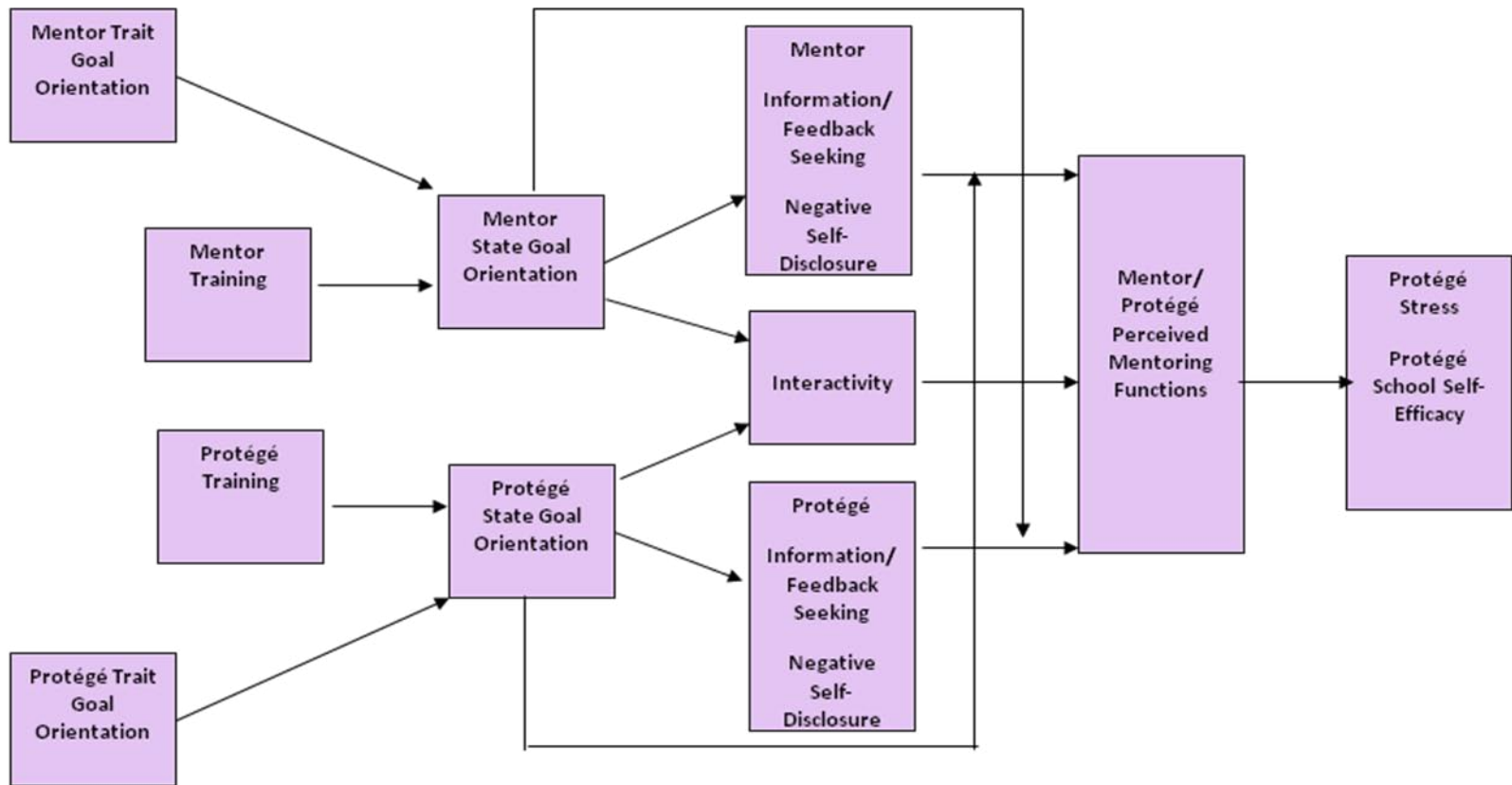


Figure 1: Graphical representation of proposed relationships.

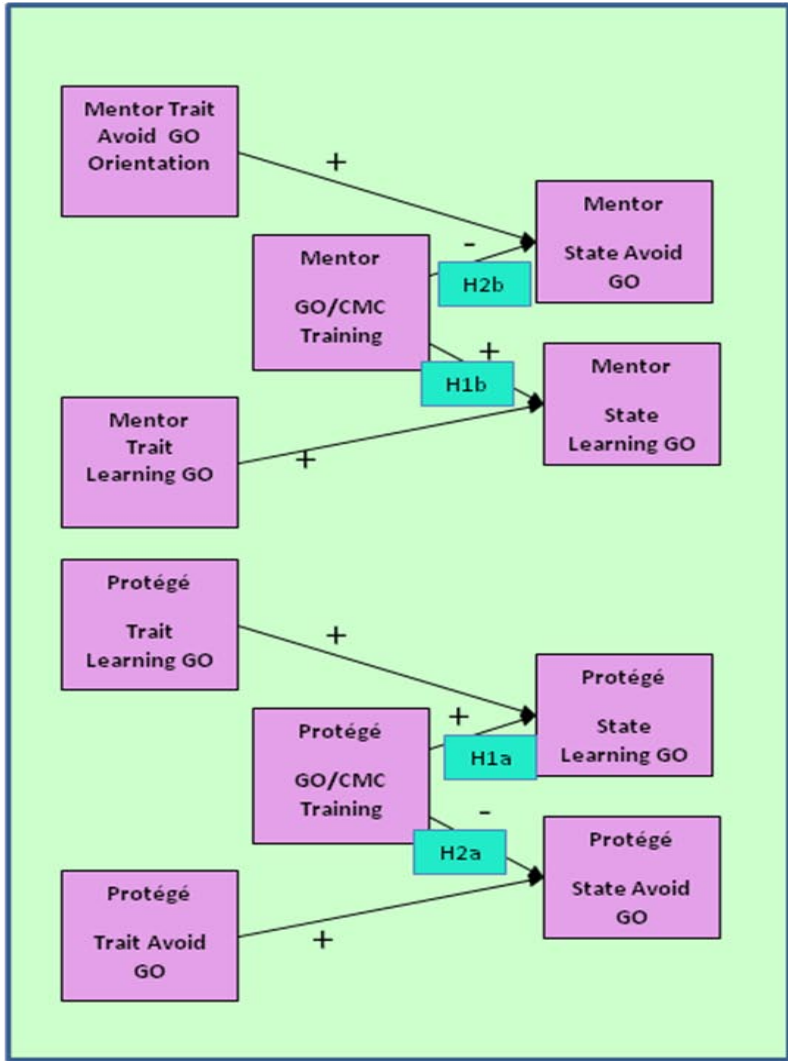


Figure 2: First Set of Hypotheses.

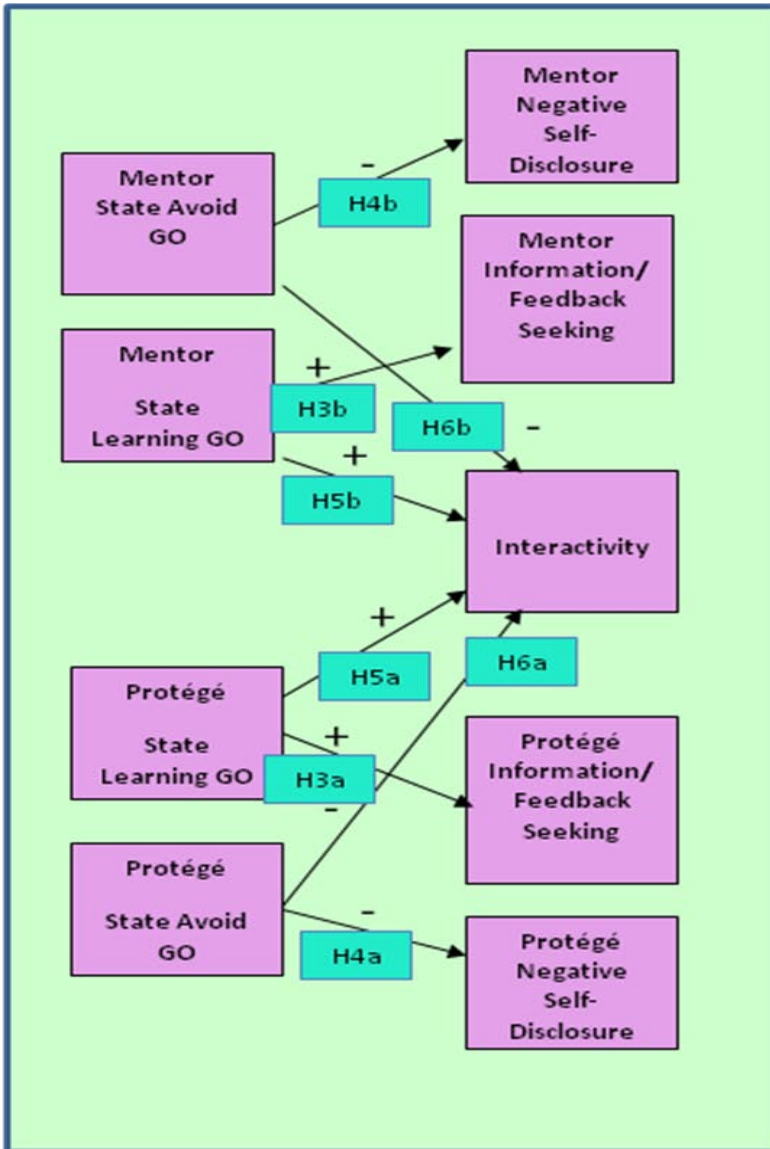


Figure 3: *Second Set of Hypotheses.*

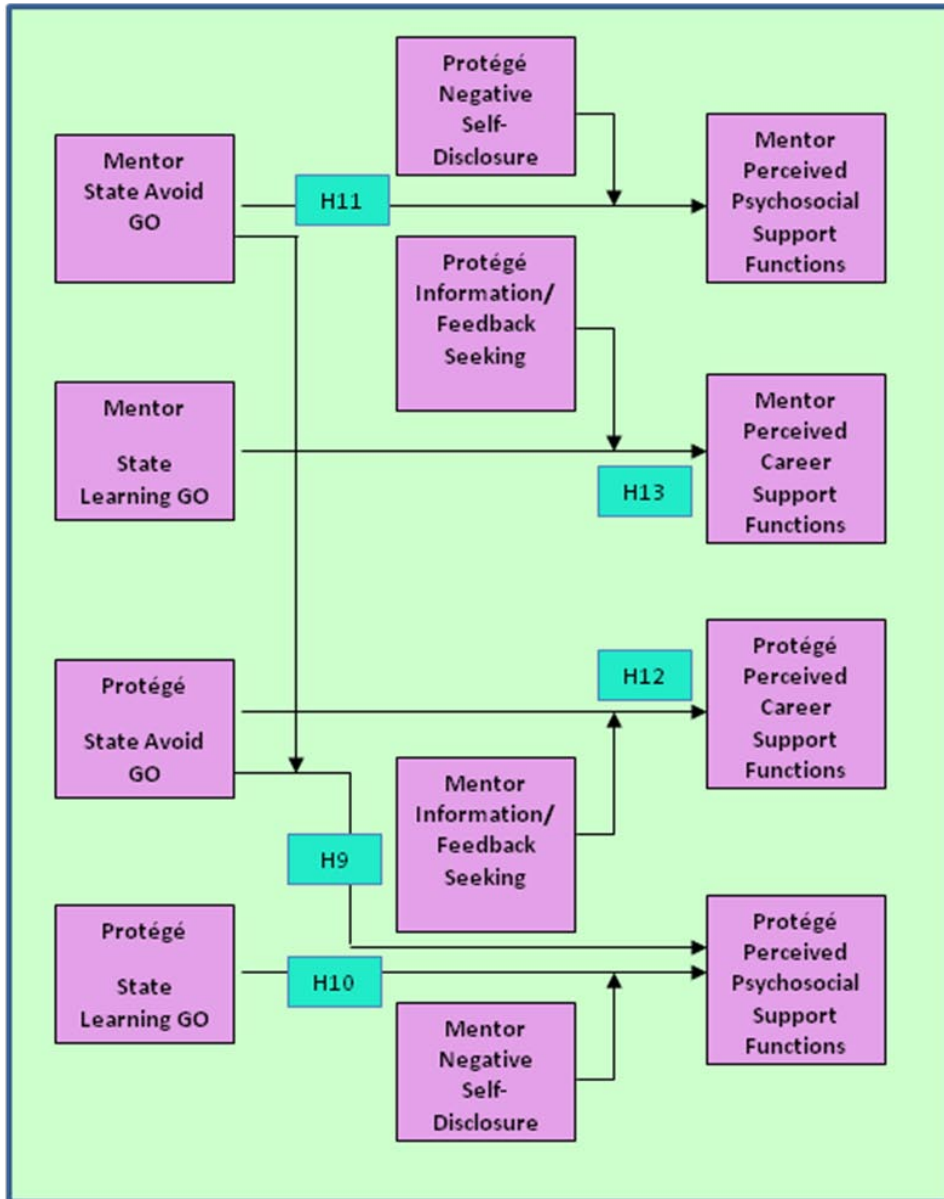


Figure 4: *Third Set of Hypotheses.*

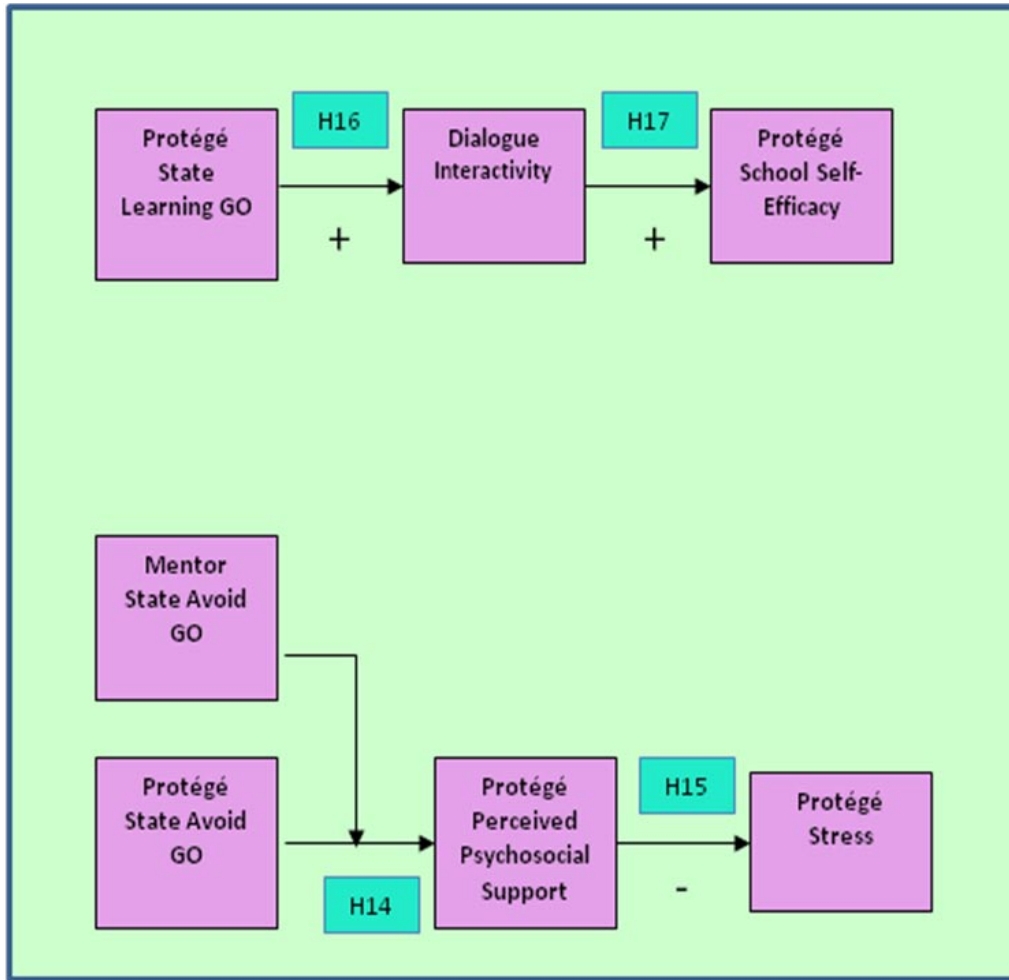


Figure 5: *Final Set of Hypotheses.*

## Purpose of the Current Study

Given the relative lack of empirical understanding in regards to the antecedents of successful mentoring relationships and acknowledging that little research is available that has examined the elicitation of states of goal orientation, several goals are proposed for the current study. First, no prior study has experimentally manipulated mentor and protégé training. In the present study, a two-by-two factorial design will be used to randomly assign mentors and protégés to receive goal orientation or computer-mediated communication training. Second, although prior mentoring studies have linked mentor and protégé trait goal orientation to important processes and outcomes, none have examined state goal orientation specifically. Due to states being more proximal to the behaviors of interest, they should prove to be better predictors than the respective traits. Thus, the lack of previous findings examining trait goal orientation may be attributable to this. Third, prior studies have focused on the mentor's behavior, specifically the provision of psychosocial and career development functions, ignoring the behavior of the protégé. In the current study, both the mentors' and protégés' behavior will be examined. Fourth and finally, prior research has relied on subjective reports to assess the mentoring process. The current study examined subjective reports of mentoring process in addition to objectively coded measures. Thus, in pursuit of examining these overarching goals, the relationships proposed in Figure 1 were examined, and a better understanding of the various processes that occur in mentoring relationships was obtained, coupled with a better understanding regarding state goal orientation in general. Specifically, it was proposed that preparatory training could elicit states of goal orientation for mentors and protégés. In turn, more information/feedback seeking behaviors should be associated with high states of learning goal

orientation, and more self-disclosure behaviors should be associated with low states of avoid goal orientation. Furthermore, it was believed these states of goal orientation would affect the manner in which mentors and protégé would react to these both. Specifically, goal orientation states and behavior were expected to interact in such a way so that individuals would respond more positively to behaviors that are consistent with their own goal orientations states. Finally, it was proposed that mentoring functions should relate to program outcomes, specifically perceptions of stress and academic self-efficacy. The first chapter presents a brief overview of mentoring in general and some of the various ways in which mentoring relationships can differ, and an overview of what is known in regards to goal orientation. The second chapter of this document presents the rationale for the mechanisms through which it is believed that goal orientation will affect the various processes and outcomes that occur during such a mentoring relationship, and present the specific hypotheses proposed for this study. The third chapter presents the methodology employed, and the fourth chapter presents the results obtained in the study. Finally, the fifth chapter will discuss the findings obtained and discuss theoretical and practical contributions of this study.



## CHAPTER TWO: LITERATURE REVIEW

### What is Mentoring?

Many individuals have traced the concept of mentoring to having origins back into the mid- to late-15th century (Roberts, 2000). Yet, although present for this substantial period of time, there seems to be little understanding regarding what relationships can and should be classified as mentoring, such as whether certain relationships fall under the realm of merely coaching, tutoring, or solely friendship, or even supervisory duties. However, most researchers have attempted to broaden the definition to include any relationship in which a more senior individual (i.e., a mentor) attempts to develop a less senior individual (i.e., a protégé) (e.g., Kram, 1985; Levinson, Darrow, Klein, Levinson, & McKee, 1978).

The general expectation of a mentoring relationship is that the protégé will benefit in one way or another from the presence of the mentor. Thus, researchers often attempt to measure the quality of mentoring relationships by assessing the mentoring functions provided during the course of the relationship. Kram and Isabella (1985) proposed that two types of functions are provided in mentoring relationships: Psychosocial and career development functions.

*Psychosocial* functions refer to those functions that address more psychological and/or socially related issues that an individual might face, such as friendship, confirmation, role modeling, acceptance, and counseling, whereas *career development* functions tend to focus on more task/work/career related issues, such as coaching, sponsorship, protection, providing challenging assignments, and increasing exposure and visibility.

Numerous outcomes have been found to be associated with these mentoring functions. For example, a meta-analysis conducted by Allen, Eby, Poteet, Lentz, and Lima (2004) found

that career development functions were related to compensation and promotion for protégés. Psychosocial functions were found to be related to satisfaction with the mentor. Furthermore, subjective career success was related to both reception of career and psychosocial functions. However, as discussed by Allen, Eby, and Lentz (2006) little is known regarding the various relationship contingencies that lead to increased provision/reception of these functions. In turn, little guidance is available for maximizing the effectiveness of mentoring relationships and/or programs.

Examining solely whether the mere presence of a mentor affected career outcomes, Allen et al. (2004) found that protégés reported higher career satisfaction, expectations for advancement, and career commitment than individuals who did not report having had a mentor. Furthermore, researchers have recently begun to recognize that even mentors can benefit from participating in mentoring relationships. In support of this notion, Allen, Lentz, and Day (2006) found that individuals who participated as mentors reported increased rates of promotion, greater subjective career success, and even higher salary than individuals who had not served as mentors.

Moreover, many researchers recognize the benefits accrued from different types of mentoring relationships, such as formal versus informal, peer versus hierarchical, and even through the utilization of different communication media. In order to put the current study in context, it should be noted that the study will examine formal mentoring relationship of peers solely through computer-mediated communication. Each of these issues will be discussed in turn.

## Peer versus Hierarchical Relationships

Although most individuals would likely assume that the most benefits would be obtainable from the most senior mentors, this is not necessarily the case. Although it stands to reason that higher-ranking individuals might have a greater ability to provide opportunities to the protégé (e.g., provide sponsorship and visibility, provide network opportunities), some studies have found that protégés benefit more from having mentors that are more similar to themselves (e.g., Allen et al., 2006). The increased benefits obtained by protégés may occur because protégés view mentors that are closer to them in status as being more similar to themselves. Furthermore, they may view their mentors' positions as more attainable. For example, an incoming undergraduate will likely feel more similar to a senior student, than he/she would to his/her professor. Moreover, students will likely feel more able to obtain the role that the senior student has obtained versus the role of the professor. In support of this notion, Allen et al. (2006) found that protégés reported receiving greater role-modeling from mentors who were closer to them in rank. Several other researchers have demonstrated the positive effects of similar-level mentoring, or more specifically "peer-mentoring" (e.g., Colvin, 2007; de Janasz, Sullivan, & Whiting, 2003; Kram & Isabella, 1985; Raabe & Beehr, 2003), thus demonstrating the positive effects attainable from mentors providing guidance to similar-level protégés as occurs in most formal academic mentoring programs.

## Computer-Mediated Communication

The exponential growth in the utilization of computers and the Internet is changing the ways in which we function on a daily basis. From the recent dramatic increase of the prevalence of online classes at universities and colleges across the country, to the entire restructuring of

organizations as many employees undertake telecommuting, the use of computer-mediated communication (CMC) is ever growing (Golden, 2006; Pethokoukis, 2002). One of the first articles to address the utilization of CMC for the purpose of mentoring was done by Ensher, Heun, and Blanchard (2003). These authors discussed the large-scale usage of mentoring utilizing CMC, coupled with a lack of evidence documenting the efficacy of its use.

It should be noted that mentoring can occur through various media. Specifically, mentoring relationships can occur face-to-face, through the use of video-conferencing, over the phone, through the internet (i.e., online chat and/or email), or utilizing any combination of these mediums. However, the media themselves can further enhance and/or detract from the positive benefits of mentoring.

There are numerous mentoring programs that occur through solely the use of computer-mediated communication, in a wide variety of contexts including high schools, universities, all different types of organizations, and also the military (Bierema, & Merriam, 2002; Ensher, Heun, & Blanchard, 2003). In many of these instances, mentors and protégés are strangers to one another, which requires that they must develop some form of interpersonal relationship in this potentially limiting medium. However, given the anonymity potentially offered by this medium, computer-mediated communication may also serve as an advantage. For example, individuals communicating in this medium may in some instances feel more comfortable discussing some of their personal problems with an anonymous stranger, as they will less likely feel that there will be any ramifications from the behavior (e.g., the protégé telling a story about his/her boss, then the mentor running into the boss and disclosing the story).

Furthermore, utilizing CMC allows individuals to form relationships with individuals independent of geographic boundaries. Thus, mentors and protégés can be located on different parts of the globe yet still communicate with one another. This, in turn, increases the possibility of individuals finding mentors that fit their specific needs. Furthermore, CMC allows for individuals to communicate with others ‘anonymously’, thus preventing the communication of certain cues (e.g., such as gender or race) that might otherwise be detrimental to the development of the relationship (Bonnet, Wildemuth, Sonnenwald, 2005; Chen & Shaw, 2006; Ensher et al., 2003; Kiesler, Siegel, & McGuire, 1984; Walther, 1992). For example, females may find it easier to find mentors (who, in certain work arenas, more often than not, tend to be male) through CMC whereas concerns regarding attraction or misattribution of behaviors between mixed-gender dyads might otherwise occur (e.g., in a face-to-face relationship) (Ensher et al., 2003; Smith-Jentsch, Scielzo, & Weichert, 2007).

Thus, CMC offers several advantages, making it an attractive alternative when compared to other media. However, the disadvantages inherent in the medium can also serve to hinder relationship formation (Bierema & Merriam, 2002; Latting, 1994; O’Sullivan & Flanagin, 2003; Savicki & Kelley, 2000; Single & Single, 2005). For example, some individuals may present too much information at one time to the other individual (Latting, 1994). Furthermore, many chat interfaces have limitations on the amount of information that can be typed or even displayed at one time, sometimes resulting in disjointed conversations that lead to miscommunications between individuals (Bonnet, Wildemuth, Sonnenwald, 2005; Chen & Shaw, 2006; Latting, 1994). Moreover, lack of non-verbal cues in communication may serve to hinder relationship formation (Kiesler, Siegel, & McGuire, 1984; Walther, 1992). Thus, both advantages and disadvantages are present for utilization of this medium.

## Formal Mentoring

Mentoring relationships can either form naturally, or be arranged such as by an organization or a university facilitating a formal mentoring program. In formal mentoring programs, mentors and protégés are typically selected and paired by the program administrators, whereas in informal relationships, mentors and protégés select one another. Furthermore, these formal programs may be of set duration, and mentors and/or protégés may receive direct rewards (e.g., compensation) for participating in such a program. Thus, formal mentoring relationships are generally shorter than informal ones (cf. Ragins & Cotton, 1993; Scandura & Williams, 2001), and individuals participating in the two types of mentoring may differ in regards to their intentions (e.g., altruistic versus money-motivated).

Several researchers have found that informal relationships are associated with increased benefits for the protégés, (Chao, Walz, & Gardner, 1992; Seibert, 1999; Underhill, 2006), relative to formal mentoring. However, formal programs have, on average, repeatedly demonstrated positive results (e.g., Chao et al., 1992; Wanberg, Kammeyer-Mueller, & Marchese, 2006) relative to no mentoring. Although the specific characteristics of these programs that lead to success are not well understood nor studied, the prevalence of these programs is evident.

Many programs have attempted to provide participants with some form of training prior to beginning in a formal program to increase the effectiveness of mentoring relationships. Furthermore, numerous individuals propose the importance of having some form of training to prepare both mentors and protégés for their up-and-coming roles. However, very few studies have actually examined the effectiveness of such training, and fewer have documented what about the training was effective. Allen et al. (2006) found that mentor and protégé perceptions of

the quality of the training they received to prepare them for their formal mentorships accounted for unique variance in their respective reports of mentorship quality and mentoring functions (i.e. career, psychosocial, and role modeling) received/given. However, due to individuals in that study having participated in various different programs, coupled with the cross-sectional nature of the study, it is not known what made mentoring participants perceive whether or not training was of high quality. Allen and colleagues discussed several components that should relate to the eventual quality of the mentorship. Specifically, training should set realistic expectations for participants, clarify the parameters and expectations of the relationship, and convey the purpose of the program. However, no prior studies have manipulated these components in a controlled environment. Thus, one goal of this study is to examine whether or not training will indeed be effective, and due to this being a true experiment versus solely survey data, be able to suggest a specific goal for future training programs if the training does prove effective. One variable that may relate to perceptions of training quality is that of goal orientation.

### Goal Orientation

Goal orientation in general refers to the approach that individuals take in regards to achievement oriented and/or learning situations (c.f., Dweck, 1986; Eisen, 1979; Vandewalle, 1993). The concept of goal orientation was initially developed by the work of several independent educational psychologists to explain student behavior in the classroom. For example, Eisen (1979) proposed that students had either a learning- or a grade-orientation when examining students' achievement motivation. Another researcher along with her colleagues, Dweck (1986) examined achievement motivation from a developmental perspective, and

proposed that students either had a learning or a performance orientation (performance orientation being similar to the grade orientation proposed by Eisen).

Although the impetus for each of the various researcher's conceptualizations were diverse, the original conceptualization of the construct of goal orientation was recognized as being comprised of two components (i.e., learning and performance), with both mutually conceived of as opposite ends of the same continuum. However, later research has indicated that the two goal orientations were independent dimensions (e.g., Eison, Pollio, & Milton, 1982). Most recently, research has indicated that performance goal orientation itself is comprised of two independent components (c.f., Elliot, 1994; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Vandewalle, 1993, 1996, & 1997). Thus, three components of goal orientation are now generally recognized: Learning goal orientation, prove goal orientation, and avoid goal orientation. These three will be discussed in turn.

#### *Learning, Prove and Avoid Goal Orientations*

*Learning* goal orientation, also referred to as *mastery* goal orientation, refers to having a desire for mastery of material while learning. In other words, this component refers to learning for the sake of learning. Learning goal orientation is said to motivate individuals to seek out opportunities to learn, and likely seek out their weaknesses in order to improve themselves. Thus, personal weaknesses are embraced as being an opportunity for self-improvement and understanding.

*Prove* goal orientation refers to having a desire to demonstrate to others one's ability or competence (Vandewalle, 1996). In other words, attempting to show others one's positive side which is likely independent of whether one learns or not. Under this orientation, individuals are likely to look for tasks in which they can excel, thus demonstrating their strengths.



Finally, *avoid* goal orientation refers to having a desire to avoid demonstrating one's weaknesses (Vandewalle, 1996). The goal for individuals with this orientation is to avoid any situation in which his/her weaknesses might be apparent. Furthermore, individuals with this orientation will likely look for external causes for their failures whenever possible to reduce feelings of incompetence. Novel situations are approached with apprehension by individuals high in this orientation, and minimal effort is expended when such situations are encountered. For example, an individual with this orientation might not attempt or might not put forth any effort to complete a task for which the person believes that failure is possible. The individual may believe that by behaving in this manner, failures cannot be attributed to his/her lack of ability. Rather, the individual could blame the failure on his/her lack of attempting.

In regards to relations with other variables, learning goal orientation has consistently been found to be positively related to various learning processes and outcomes, whereas avoid is consistently negatively related. Furthermore, many studies have failed to find direct relations between prove goal orientations and outcomes, whereas most that do find relations find moderators that interact with prove goal orientation to predict outcomes (c.f., Payne et al., 2007). Thus, the present study will focus on only learning and avoid goal orientation.

### *Mentoring and Goal Orientation*

A small number of recent studies thus far have examined the relationship of goal orientation on mentoring relationship effectiveness. Godshalk and Sosik (2003) examined the role of mentor and protégé *learning* goal orientation on protégé-reported mentoring relationship processes and outcomes, and found that similarly-high levels of learning goal orientation for mentors and protégés led to increased reports of psychosocial functions and career development functions having been received, along with various other outcomes such as increased managerial

aspirations and career aspirations. They contended that the results of this study provided support for Ragins' (1997) dyad homogeneity theory, which proposed that the more similar a mentor and a protégé, the more likely that mentoring functions would be provided. Egan (2005) replicated the study done by Godshalk and Sosik, finding additional support for the importance of dyad homogeneity. Specifically, Egan found that similarly high learning goal orientation was related to increased managerial aspirations, idealized influence, and commitment to goals.

Additionally, Hirschfeld, Thomas, and Lankau (2006) examined achievement motivation (similar to learning goal orientation) and avoidance goal orientation in regards to perceptions of learning and perceived mentoring functions, utilizing a longitudinal design with individuals participating in a voluntary work-related mentoring program. They found that the mentors' perceptions of personal learning from the relationship were positively related to the level of achievement motivation and negatively to the avoidance goal orientation of the protégé. Furthermore, the protégés' own level of achievement motivation were related to their perceptions of personal learning. Moreover, high achievement motivation protégés paired with high achievement mentors reported the highest personal learning. The second most effective combination in regards to protégé reports of personal learning occurred when high achievement protégés were paired with low achievement mentors, followed by when low protégés were paired with low mentors. Finally, the worst combination was the pairing of low achievement motivation protégés with high achievement motivation mentors.

Finally, one study currently in preparation (Smith-Jentsch et al., 2007), found that mentor levels of avoid goal orientation were positively related to stress reduction for the protégés who were high on avoid themselves, whereas a low avoid protégé with a high avoid mentors would experience lesser reductions in stress. In sum, although high learning goal and low avoid

orientations are desired, mis-matching of these types may actually lead to decreased benefits in some instances. Thus, any mechanism to reduce these discrepancies that might exist should be of value in these situations.

Although limited in the conclusions that can be drawn from these few studies, they have provided substantial initial evidence that trait goal orientation plays an important role in mentoring relationship effectiveness. The goal orientations of mentoring participants should likely be of value to these relationships for various reasons. Given the previous explanations of learning and avoid goal orientation, individuals with a learning goal orientation might be more likely to approach the challenges inherent in a mentoring relationship (Johnson, 2002; Tang & Choi, 2005) as opportunities for learning rather than as obstacles. They may also be more likely to put forth more effort in an attempt to solve these issues, and may be more likely to feel positive about what they have accomplished through the course of their mentoring relationships. Protégés high in this orientation may be more likely to attempt to gain information from their mentors. Mentors high in this orientation may be more likely to attempt to seek out information from their protégés that will in turn guide their future remediation attempts.

In regards to avoid goal orientation, individuals lower in this orientation might be less likely to give up when difficult or challenging situations arise in the mentoring relationships, and may be more likely to seek out opportunities to undertake effective behaviors. For example, protégés low in this orientation may be more likely to share information regarding personal weaknesses and concerns. Mentors may be more likely to continue to try to solve a problem for a protégé, even if he/she does not feel comfortable with the topic, or a mentor may be more likely to seek out novel information about his/her protégé. Furthermore, mentors low in this orientation may also be more likely to provide information to their protégés regarding their own personal

weaknesses. So, if we know that goal orientation is valuable to mentoring relationships, the question remains to whether or not goal orientation can be trained.

### *State Goal Orientation*

Although goal orientation has generally been regarded as being a trait due to general stability of scores over time, it is also recognized that states of goal orientation can be elicited under different circumstances (e.g., Kozlowski and Bell, 2006; Stevens & Gist, 1997; etc.). Payne et al. (2007) found that goal orientation was fairly stable over a short period of time, but, as the time period increased, the stability of the trait decreased, calling into question the extent to which goal orientation is solely a trait. It is likely that an initial tendency to behave in a certain way in ambiguous or novel situations is present. However, due to the studies that have found the manipulability of states coupled with the decrease in stability over time, it is likely that the initial tendency can be molded. Thus, the strength of the situation may come into play determining the extent to which goal orientation traits are apparent. Specifically, when there are little or no environmental cues (i.e., weak situations) guiding behavior, it is likely that trait will be more apparent. In contrast, when salient environmental cues are present, the trait will be less important. This argument has been proposed by several goal orientation researchers (e.g., Button, Mathieu, & Zajac, 1996; Hoffman & Strickland, 1995; Mangos & Steele-Johnson, 2001). Furthermore, upon examination of the various studies that have studied state goal orientation, the current author contends that the state goal orientation may not be so much of a 'state' as currently examined, but more of a task-specific way of behaving in regards to certain situations or cues. In other words, state goal orientation may fluctuate in regards to various tasks that might be encountered, but it should be consistent in regards to specific tasks once the cues for behavior

have been set. Now that a brief background has been provided, the following sections will more specifically present the logic supporting the hypotheses.

## Hypotheses and Rationale

### *Is Goal Orientation Training Effective?*

Training may provide a viable mechanism through which to elicit the desired states of goal orientation from mentoring participants. As previously discussed few studies have attempted to utilize training for participants. However, the study done by Allen, et al., (2006) found that mentor and protégé perceptions of the quality of the training they received to prepare them for their formal mentorships accounted for unique variance in their respective reports of mentoring functions provided/received and mentorship quality. Thus, it is likely imperative that all individuals be trained to maximize the benefits of such a relationship. Furthermore, in attempting to manipulate the behaviors and processes that will be undertaken in a mentoring relationship, it is likely that if one individual is actively undertaking the behaviors associated with the respective trained goal orientations and the other is not, then tensions may arise and in turn negative mentoring processes may occur. For example, in an example argument proposed by Smith-Jentsch et al. (2007), it was proposed that a “low-avoid” mentor would likely share his/her personal shortcomings with his/her protégé. If the protégé was high in avoid, the protégé might feel uncomfortable perceiving that he/she needed to reciprocate that behavior. Furthermore, the protégé might feel that the mentor is incompetent, believing that only incompetent individuals would discuss those shortcomings. Thus, the current study will manipulate training at both the protégé and mentor level to examine the extent to which training of one, the other, or both affects the various processes and outcomes.

Furthermore, three major specific design features of training were selected for the current study in regards to their anticipated effects on eliciting the desired states of goal orientation. Specifically, it has been argued that states of goal orientation can be manipulated through frames, practice and feedback, and goals can elicit states of goal orientation (Gist & Stevens, 1998; Kozlowski & Bell, 2006; Stevens & Gist, 1997). Each will be discussed in turn.

*Goal orientation frame.* It stands to reason that individuals participating in a mentoring relationship should have some form of preconceived notions regarding what is to be expected of them. Through the process of training, these notions can be modified accordingly. In regards to goal orientation specifically, training may provide a frame for individuals to reference when attempting to decide how to behave. In support of this notion, Drach-Zahavy and Erez (2002) found that goal-frame (i.e., whether the situation was presented as a threat or a challenge) affected performance. Specifically, individuals in the ‘challenge’ condition were much more likely to perform well than those in the ‘threat’ condition. Furthermore, Kozlowski and Bell (2006) found that performance on a task was maximized when task frames and goals were both learning oriented, versus when both were performance oriented. Furthermore, incongruency (e.g., learning frame, performance goal) was better than when there was performance congruency (i.e., performance frame, performance goal). Frames refer to the experimental cues that would provide indicators of expected behaviors to participants. Consistent with Kozlowski and Bell, a learning goal frame consists of encouraging participants to approach the task as an opportunity to develop their skills, and to learn from their mistakes. Thus, for mentoring relationships, setting an appropriate goal frame requires explaining to participants the upcoming difficulties that they may face, and directing them to view these as learning opportunities. Furthermore, it should be

emphasized that they will likely make mistakes, but that these errors will provide them an opportunity to further develop their skills.

*Practice and feedback.* One component that has repeatedly demonstrated itself as being beneficial for the success of any training program is that of practice and feedback. Specifically feedback has been shown to affect state goal orientation. For example, Van Duyne (2002) manipulated whether participants would receive process or outcome feedback. She found that individuals who received process feedback reported a stronger state of learning goal orientation than those who receive outcome feedback. Furthermore, both trait goal orientation and the manipulation influenced state goal orientation. Another study conducted by Smith-Jentsch, Milanovich, and Merket (2001), found a team feedback strategy that employed process-oriented feedback to be associated with greater states of learning goal orientation.

Thus, process-related feedback should be incorporated into mentor and protégé training to induce state learning goal orientation. Specifically, by providing individuals with sample concerns that might arise in the course of a mentoring relationship, allowing them to respond, and then providing them with feedback regarding their communication processes, individuals should be able to modify their performance as desired.

*Goal-setting.* Goal setting has repeatedly demonstrated relations with a great number of performance outcomes (e.g., Lee, Sheldon, & Turban, 2003; LePine, 2005). As discussed by Seijts, Latham, Tasa, and Latham (2004), over 500 empirical studies have confirmed the importance of goal setting in regards to performance. Locke and Latham (1990, 2002, 2006) proposed that goal setting lead to these outcomes through 4 mechanisms: (a) increased effort and greater persistence being put forth when high goals are present; (b) higher goals directing attention to the task more so than lower goals, goals leading to increased effort and actions; (c)

the presence of goals may automatically resource stored knowledge; and finally, (d) goals may motivate individuals to look for necessary information to complete desired tasks. By training how to effectively set goals, and what types of goals are appropriate, individuals are expected, in turn, to set goals for themselves and for their partner that are consistent with a high learning goal and a low avoid goal orientation. Once their goals are developed, the goals themselves will help to maintain individuals on track as they proceed through their mentoring functions.

Thus, training for such a mentoring program should incorporate setting appropriate goal orientation frames, should incorporate process feedback rather than outcome feedback, and should set appropriate process learning goals. In turn, the training that the experimental condition will receive has been designed to (a) educate participants regarding the two subcomponents of goal orientation in which we are interested, (b) demonstrate how goal orientation can relate to mentoring relationship behaviors, and in turn provide the desired goal orientation ‘frame’ for participants, (c) allow participants to practice generating their own examples and practice responding utilizing effective goal orientation behaviors to various situations that might arise in the course of their mentoring relationships, and provide them with feedback, and finally, (d) provide guidelines for setting realistic goals oriented towards a high learning and a low avoid orientation for the mentoring relationship. Thus, the same content will be presented to both mentors and protégés; however, the examples will be modified to each group accordingly. In turn, it was proposed that goal orientation training should elicit the desired states of goal orientation, controlling for the respective traits. Thus, it was proposed that:

*Hypothesis 1. (a) Protégés and (b) mentors who receive goal orientation training will report higher states of learning goal orientation than those who do not.*



*Hypothesis 2. (a) Protégés and (b) mentors who receive goal orientation training will report lower states of avoid goal orientation than those who do not.*

### *Process Behaviors*

Although there are a plethora of potential processes that relate to the effectiveness of mentoring relationships, three different variables were chosen for examination in the current study due to their proposed relations with goal orientation. Specifically, the three processes that were selected are (a) information/feedback seeking, (b) negative self-disclosure behaviors, and (c) dialogue interactivity. It is likely that state goal orientation will affect the extent to which individuals undertake these various behaviors, which will each be discussed in turn.

*Information/Feedback seeking.* Information seeking generally refers to any form of eliciting information that an individual might undertake (e.g., Morrison, 2002), whereas feedback seeking has been defined as a “conscious devotion of effort toward determining the correctness and adequacy of behaviors for attaining valued end states” (Ashford & Cummings, 1983, p. 466). Due to conceptual similarity of these two constructs, they are typically conglomerated together as one overarching construct (e.g., Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007), as will be done in the current study. Some example information/feedback seeking behaviors of a mentor might include him/her asking “How did your exam go today?” or “Is there anything specific you would like to talk about today?” Some examples a protégé might ask include “Do you know where I can go to get some free math tutoring?” or “Have you ever been in this situation?”

It was proposed that individuals high in learning goal orientation will likely undertake more information/feedback seeking behaviors than individuals lower in the construct, as these individuals actively attempt to find problems. In support of this notion, Ford, Smith, Weissbein,

Gully, and Salas (1998) found that individuals high in learning goal orientation were more likely than those lower in the construct to undertake metacognitive processes, which included such behaviors as planning, revising goal appropriate behavior and monitoring learning behavior. Furthermore, Levy-Tossman, Kaplan, and Assor (2007) found that learning goal orientation was positively associated with adaptive problem solving. Thus, it is likely that mentors who are high in state learning may be more likely to undertake information/feedback seeking behaviors with their partners.

In further support, Vandewalle (1996; 2003) proposed that goal orientation would be related to six different dimensions of feedback seeking behaviors (i.e., frequency, source, timing, type, sign, and method). In additional support of these arguments, Vandewalle and Cummings (1997), found that learning goal orientation was positively related to feedback seeking behaviors.

Moreover, Vandewalle, Ganesan, Challagalla, and Brown (2000) found that trait learning goal orientation was related to feedback seeking behaviors for salespeople, again utilizing a survey design. In addition, Janssen and Prins (2007) found that learning approach (similar to learning goal orientation) was positively related to seeking self-improvement information. Smith-Jentsch et al. (2007) found that teammates who had stronger state learning goal orientations were more likely to admit mistakes, ask for feedback, and offer feedback in a team debrief than those with lower state learning goal orientation. Thus, individuals higher in learning goal orientation appear to be more likely to undertake feedback seeking behaviors.

*Hypothesis 3. (a) Protégés' and (b) mentors' state learning goal orientation will be positively related to information/feedback seeking behaviors.*

*Negative Self-Disclosure.* Self-disclosure refers to provision of personal information, such as emotions, failures, beliefs, experiences, and successes in the course of discussion (Hinde, 1997; Wanberg, Welsch, & Kammeyer-Mueller, 2007). According to Wanberg and colleagues, self-disclosure has demonstrated itself to be a critical component to the development and maintenance of relationships. Utilizing self-reports of self-disclosure for both mentors and protégés, Wanberg et al. (2007) found that protégé perceptions of self-disclosure positively related to several protégé-reported mentoring relationship outcomes (e.g., mentoring relationship satisfaction, job outcomes, mentoring functions) for participants in a fairly long term formal mentoring program. However, mentor-reported self-disclosure had little, or was even negatively related in some instances to these outcomes. One potential explanation provided was that the nature of the program (i.e., work program aimed toward providing career development functions) may have attributed to these findings. The current mentoring program will differ in several ways – it will use an academic population, and mentors and protégés will be closer in status. Furthermore, the current program will occur online, thus providing an opportunity for individuals to feel ‘safer’ in disclosing information. Processes will be objectively coded, thus providing a better indicator of the self-disclosure behaviors that occur. Finally, the current study will focus on one specific type of self-disclosure that should relate to states of avoid goal orientation, specifically, negative self-disclosure.

Negative self-disclosure refers to relaying unpleasant or embarrassing emotional information about one’s self (e.g., Tolor, Cramer, D’Amico, & O’Marra, 1975). Some examples of negative self-disclosure of a mentor might include “I actually failed my first exam in that class too” or “I used to be terrified to hang out with new people.” Some protégé examples might include “I’m really mad about the questions that were asked on that exam” or “I feel so lost and

alone.” These types of behaviors should be instrumental for mentoring relationship success, but it is likely that individuals high in state avoid goal orientation would be less likely to undertake negative self-disclosure behaviors due to the embarrassment or feelings of incompetence that these behaviors can induce (e.g., Tolor, et al.). Hence, it was hypothesized that:

*Hypothesis 4. (a) Protégés’ and (b) mentors’ state avoid goal orientation will be negatively related to negative self-disclosure behaviors.*

*Dialogue Interactivity.* Dialogue interactivity refers to the amount of interaction that occurs between a mentor and a protégé. In other words, dialogue interactivity refers to the extent to which individuals communicate with one another, building off the ideas presented by the other and vice versa. In support of this idea, according to Henri (1992), interactivity is a three-step process that involves first the relaying of information, then an acknowledgement or response of that information, and finally a reply to the response. Interactivity in online mentoring sessions has previously been operationalized as the number of speaker changes (e.g., Smith-Jentsch et al., 2007), thus providing an indication to the extent to which dyad members are communicating with one another versus one or both constantly presenting ‘large bodies of information’ without actually ‘interacting’.

Dialogue interactivity, in turn, provides an indicator of the extent to which mentors and protégés are communicating *with* one another, not just the amount of communication relayed *from* one *to* the other and vice versa. For example, it is quite possible for a mentor to communicate a great deal (possibly a 10-minute diatribe regarding the importance of attending the weekly ‘Fishing and Cotton Candy Lovers’ university club meeting). However, if the protégé is not acknowledging his/her statements and providing responses, then the information may not

be being processed by the protégé (e.g., the protégé may be completely ignoring the statements because he/she absolutely hates both Fishing and Cotton Candy, and further abhors the notion that such a club even exists).

In addition to providing an important indicator for assessing mentoring relationship processes, it stands to reason that state learning and avoid goal orientations will be related to the amount of dialogue interactivity elicited by both mentors and protégés. Specifically, the higher an individual is in learning goal orientation (and lower in avoid), the more likely is it that the individual will be interactive in the mentoring relationship. In support of these propositions, Ames and Archer (1988) found that students' perceptions regarding classroom goal orientation related to students' learning strategies. Specifically, students who perceived mastery (i.e., learning) orientations were more likely to prefer challenging tasks, to believe that success and effort were related, and to enjoy their classes more. Thus, individuals higher in learning goal orientation might be more likely to effectively engage themselves in communication, approach the relationship as a difficult yet manageable task, and believe that their attempts at communication will be rewarded.

Moreover, due to the proposition that individuals high in avoid goal orientation tend to avoid situations in which they believe they will not be able to positively demonstrate themselves, it is likely that individuals high in the construct will not actively desire to participate with their partners. Mentors/protégés trained to have high learning goal orientations and low avoid learning orientations will likely approach the mentoring task with more appreciation for the difficulties inherent in such a task, and be further dedicated to the task of making the relationship successful which in turn will lead them to trying to 'communicate' with and 'respond' to their protégés/mentors. Consistent with these arguments, Smith-Jentsch et al., (2007) found that trait

learning goal orientation of the protégé was related to dialogue interactivity. However, trait avoid goal orientation was not. This was likely attributable to trait being measured, whereas in the current study state is being assessed. Due to the increased proximity of state to behaviors, then it is likely that this relationship may be stronger and that state may yet prove predictive. Thus, it was proposed that:

*Hypothesis 5. (a) Protégé and (b) mentor state learning goal orientation will be positively related to dialogue interactivity.*

*Hypothesis 6. (a) Protégé and (b) mentor state avoid goal orientation will be negatively related to dialogue interactivity.*

Furthermore, dyads that are more interactive are more likely to be aware of the other communicators' intents, desires, and also more likely to have a shared understanding. As discussed in the previous section, interactivity provides an indicator of the extent to which dyad members are 'communicating' with one another. Thus, if a mentor is attempting to relay what he/she believes to be important information to a protégé, the mentor will be more likely to feel that the information was of value if the protégé responds regarding the information that is provided. Furthermore, the mentor will feel that the information is of value if it builds off something that the protégé previously stated or discussed.

From the protégé perspective, protégés will also likely feel that information is of more value to him/her if it was based off something that he/she previously acknowledged as being important. Responses in regards to the protégé's comments from the mentor will likely be perceived as interest by the protégés, and in turn lead to feelings of psychosocial support. Furthermore, task specific conversation of interest will likely be discussed in this situation thus leading to increased protégé perceptions of career development functions having been received.

In support of these notions, Smith-Jentsch, Scielzo, Bencaz, & Miller (2007) found that dialogue interactivity was positively related to perceived mentoring functions. Thus, it was proposed that:

*Hypothesis 7. Dialogue interactivity will be positively related to mentors' perceptions of (a) psychosocial and (b) career development functions provided.*

*Hypothesis 8. Dialogue interactivity will be positively related to protégés' perceptions of (a) psychosocial and (b) career development functions received.*

### *Interactions Between Mentor and Protégé Goal Orientations*

Kozlowski and Bell (2006) found that the consistency of goal content and goal frame was an important determinant of task performance. Thus, these two components served to reinforce one another and direct behavior in the desired manner. In a mentoring relationship, it is likely that individuals will look to their partner to determine what is appropriate behavior. In other words, the partner may serve as a 'frame' for participants, thus providing them with cues regarding how they believe they are to perform. For example, if a mentor demonstrates a low avoid goal orientation and provides cues indicative of such an orientation (such as by disclosing personal examples), in turn he/she may present a low avoid goal frame for his/her protégé. In turn, the protégé likely feel obliged to attempt to adopt such an orientation. However, if the protégé does not feel comfortable with doing so, then the protégé may feel that the mentor was inappropriately eliciting personal information. Similarly, it has previously been found that trait avoid orientation of mentors and protégés interacted with one another to predict stress reduction for protégés (Smith-Jentsch et al., in prep). Specifically, it was better that dyad members had similar levels of trait avoid goal orientation in regards to protégés' perceptions of stress

reductions. Thus, the same mechanisms likely occur in regards to perceptions of provision of psychosocial functions.

Furthermore, Pensgaard and Roberts (2003) found that ego orientation (similar to performance as previously discussed, but this particular finding likely is attributable to the avoid component) was positively associated with utilization of denial of problems as a coping strategy. Thus, individuals low in avoid would rather avoid such problems. Thus, dyadic heterogeneity in the construct will likely relate to decreased psychosocial functions being relayed within a mentoring relationship.

*Hypothesis 9. Mentor state avoid goal orientation will interact with protégé state avoid goal orientation to predict protégé perceptions of psychosocial support. Specifically, mentor state avoid goal orientation will be positively associated with psychosocial support for protégés high in state avoid goal orientation but negatively associated with psychosocial support for protégés low in state avoid goal orientation.*

#### *Interactions Between State Goal Orientation and Process Variables*

Mentoring relationships in which high amounts negative self-disclosure behaviors transpired should provide protégés with increased mentoring functions. Specifically, as protégés share their problems and concerns with their mentors, mentors should be more likely to provide relevant solutions and personal examples. Moreover, negative self-disclosure should be an important component on behalf of both protégés and mentors. A mentor's relaying of personal experiences and concerns can facilitate a protégé to develop a sense of friendship with him/her. In addition, the protégé can benefit from these experiences and feel that psychosocial functions have been received.

However, it is likely that if a mentor demonstrates a high amount of these negative self-disclosure behaviors, and the protégé is high in state avoid goal orientation that the protégé will



likely perceive that less psychosocial functions were received than if the protégé were lower in the construct. Specifically, negative self-disclosure behaviors will likely be perceived by a protégé high in avoid goal orientation as direct attempts to make the protégé feel uncomfortable (as these behaviors may elicit a response from him/her that he/she may not feel comfortable providing). Furthermore, protégés may feel that their mentor is highly incompetent due to the mentor relaying this embarrassing information about his/her weakness. However, protégés low in avoid goal orientation will likely perceive the mentors' examples as an attempt to share his/her past obstacles overcome, readily accept and respond to such requests, and in turn perceive that psychosocial functions were relayed.

Furthermore, the same relationship will likely hold from the mentor perspective. For example, if a protégé demonstrates a high amount of negative self-disclosure, and a mentor is high in avoid goal orientation, then the mentor will perceive that he/she did not receive a great deal of psychosocial support. If the opposite relationship occurs (i.e., a protégé low negative self-disclosure, but a mentor high in avoid), then a mentor will also feel that he/she did not provide a great deal as the protégé never opened up to him/her and asked him for any sort of help. In other words, a mentor may not know where or how he/she could have helped the protégé without him/her having requested it (e.g., feelings that the protégé must not have needed any psychosocial support), thus leading to perceptions of not having helped the protégé psychosocially. Thus, it was proposed that:

*Hypothesis 10. Mentor negative self-disclosure behaviors will interact with protégé state avoid goal orientation to predict protégés' perceptions of psychosocial support received. Specifically, mentor negative self-disclosure will be negatively associated with protégé perceived psychosocial support for high state avoid goal orientation protégés and positively associated for low state avoid goal orientation protégés.*

*Hypothesis 11. Protégé negative self-disclosure behaviors will interact with mentor state avoid goal orientation to predict mentors' perceptions of psychosocial support given. Specifically, protégé negative self-disclosure behaviors will be negatively associated with mentor perceived psychosocial support given for high state avoid goal orientation mentors and positively associated for low state avoid goal orientation mentors.*

Individuals who seek information and feedback during the mentoring relationship are more likely to identify situations where problems in communications have arisen. Ineffective communication, in turn, should inhibit the effective transmission of ideas. Furthermore, mentors who elicit information from their protégés should be more likely to identify key areas of deficiency and should be able to remediate these problem areas accordingly. Protégés who elicit information from their mentors will be able to obtain information that is relevant to them, and in turn feel that the information is of value. Thus, more mentoring functions are likely to be relayed in all of these cases. In support of these notions, Thomas, Hu, Gewin, Bingham, and Yanchus (2005), using a policy-capturing design, found that potential mentors were more likely to be agreeable to mentoring protégés who engage in more proactive socialization behaviors. Proactive socialization behaviors referred to behaviors that protégé elicited in an attempt to actively engage him/herself in the relationship, and undertake feedback- and information-seeking behaviors. Thus, protégés who appear proactive will likely be more positively received by mentors. In turn, mentors will likely be more engaged in the relationship and in turn provide more mentoring to the protégés.

In addition, Wanberg, Kammeyer-Mueller, and Marchese (2006) found that mentor proactivity, defined as tendency to attempt to mold or shape one's environment, positively related to mentor and also protégé reports of career support functions. Proactivity might include such behaviors as having initiative, not being passive, and clearly articulating points that are

important to oneself. Thus, it stands to reason that information/feedback seeking might be an important mechanism through which mentoring relationship benefits are attainable. Furthermore, due to the potential problems that can arise in communications due to the ambiguities inherent in CMC, coupled with a need for attaining information from one another in order for a successful mentoring relationship to occur, information/feedback seeking should be of value to both mentors and protégés. However, individuals who are low in learning goal orientation may be less likely to respond favorably to such requests for information, and subsequently less likely to respond. Furthermore, they may perceive these requests as inappropriate and feel uncomfortable responding to these requests. Thus, individuals low in learning goal orientation may be less likely to feel that career support functions were relayed during the course of the mentoring relationship when communicating with someone high in these behaviors. However, individuals high in learning goal orientation will likely reinforce such behaviors eliciting information with enthusiasm, and subsequently seek out the information and/or respond. Subsequently, this should lead to obtaining desired career support information. Thus, individuals high in state learning goal orientation communicating with someone who demonstrates greater information/feedback seeking will likely feel that more career support functions had been relayed. Thus, it was proposed that:

*Hypothesis 12. Mentor information/feedback seeking behaviors will interact with protégé state learning goal orientation to predict protégés' perceptions of career support received. Specifically, mentor information/feedback seeking behaviors will be positively associated with protégé perceived career support for high learning goal orientation protégés and negatively associated for low state learning goal orientation protégés.*

*Hypothesis 13. Protégé information/feedback seeking behaviors will interact with mentor state learning goal orientation to predict mentor perceptions of career support given. Specifically, protégé information/feedback seeking behaviors will be positively associated with mentor perceived career support for high state learning goal orientation mentor and negatively associated for low state learning goal orientation mentors.*

In addition, Sosik, Godshalk, and Yammarino (2004) also found that dyadic levels of goal orientation was an important consideration when examining learning goal orientation. They further contended that dissimilarity (e.g., a mentor high in learning goal orientation with a low learning goal orientation protégé) could in turn hinder mentoring relationships (e.g., aspirations of career success lessened due to dislike of the approaches presented by the mentor). Thus, it seems plausible that incongruency between others' goal orientation on expectations and their partners' behaviors might lead to feelings of stress or tension. Furthermore, the increased stress experienced in the relationship may relate to protégés' overall feelings of stress, as they volunteered to participate in this program as an attempt to help to reduce their stress. In other words, feeling that the relationship designed to help them and reduce their stress actually caused them additional stress, will likely lead them to feeling additional stress. However, in relationships where the protégé and the mentor are both hi or low in state avoid goal orientation, protégés will likely not experience this added stressor, and might be more likely to perceive that the mentoring relationship was successful.

Furthermore, as discussed by Smith-Jentsch et al., (2007), those high on avoid goal orientation tend to view ability as fixed. In turn, these individuals should be less likely to discuss their weaknesses with their mentor. Thus, these individuals should also be less likely to benefit from the advice and help of a mentor, although, in fact, their need may be greater. Moreover, if the protégé is high in avoid goal orientation, but the mentor is low in it, then the protégé may be

more likely to perceive that the mentor is incompetent when he/she shares his/her weaknesses due to the protégé's beliefs regarding the un-malleability of ability. In addition, the sharing of such instances in turn may elicit that the protégé reciprocate – which may cause additional stress for the protégé. Finally, when both mentor and protégé are low in avoid, if the mentor provides personal examples and sets a frame of 'sharing.' In turn, the protégé may find the situation stress relieving as he/she is provided with the opportunity to discuss these issues.

In support of these arguments, Smith-Jentsch et al., (2007) found that trait avoid goal orientation of mentors and protégés interacted with one another to predict stress reduction for protégés. Specifically, a cross interaction was found, such that when dyad members were homogenous (i.e., both either high or low in the construct), stress reduction was higher, as opposed to situations where the dyad members were heterogeneous (i.e., one high, one low). Thus, I propose that this relationship will generalize to state avoid goal orientations and hypothesize that:

*Hypothesis 14. Mentor state avoid goal orientation will interact with protégé state avoid goal orientation to post-mentoring stress for protégés. Specifically, mentor state avoid goal orientation will be negatively associated with post-mentoring stress for protégés high in avoid goal orientation but positively associated with post-mentoring stress for protégés low in state avoid goal orientation.*

#### *State Goal-Orientation, Mentoring Functions and Academic Stress*

Protégés' perceptions of psychosocial functions received from a mentoring relationship will likely mediate the above proposed relationship. Specifically, dyads that are homogenous in state avoid goal orientation will likely demonstrate higher reductions in stress when the protégé perceives a greater amount of psychosocial support functions having been received. As discussed in a previous section, mentor and protégé goal orientation will likely interact to predict the

provision of psychosocial functions. Coupled with the arguments in the previous section proposing that interactions of state goal orientation will lead to reductions in stress for the protégé, it seems plausible that the mechanism through which stress is reduced is predominantly psychosocial. As previously discussed, stress is likely reduced through interactions that occur in the course of the mentoring relationship. If both the mentor and protégé are low in avoid goal orientation, then the protégé may find that the dialogue provides a cathartic environment conducive for receiving and eliciting psychosocial functions. However, if the mentor is low and the protégé high, then the protégé may not feel that psychosocial needs are met as the mentor appears to be inappropriately soliciting information and providing instances of his/her incompetence. Furthermore, if the protégé is low and the mentor high, then the protégé will likely not receive the personal examples that will lead him/her to feeling that psychosocial functions were received as the mentor will feel inhibited to provide such examples. Thus, it was hypothesized that:

*Hypothesis 15. Protégé-reported psychosocial support will mediate the interaction of mentor and protégé state avoid goal orientation in predicting protégé post-mentoring stress.*

### *Self-Efficacy*

One of the most important variables that might be affected by states of goal orientation is self-efficacy. According to the theory proposed by Bandura (1977), self-efficacy refers to the degree or extent to which an individual feels that he or she is able or competent to complete desired tasks. Individuals with higher self-efficacy are more likely to engage in tasks than those lower in self-efficacy, more likely to persist at those tasks, and more likely to set higher goals for themselves. Furthermore, as proposed by the theory, an individual's self-efficacy can be derived

from several different sources; past experiences, persuasion from others, vicarious experiences, and even physiological arousal. Thus, self-efficacy is an important variable to consider when dealing with such a task as a mentoring relationship.

Steele-Johnson, Beauregard, Hoover, and Schmidt (2000) found that goal orientation interacted with the consistency of the task at hand to predict self-efficacy. Specifically, when the task was consistent, high performance oriented individuals were likely to have the higher self-efficacy. However, when the task was inconsistent, individuals with a learning goal orientation were much more likely to have high self-efficacy, whereas those with a performance/avoid (not separated for this study) orientation dropped (demonstrating a cross-interaction). Given that mentoring relationships tend to be an inconsistent task in that the topic of conversation continually changes, the latter relation would be expected. Furthermore, in regards to mentoring specifically, Egan (2005) found that learning goal orientation of protégés related to reports of managerial career aspirations. Managerial career aspirations appears to be similar to the construct of self-efficacy, however a specific form of the construct tailored to the job of the participants studied. Thus, it was proposed that:

*Hypothesis 16. Protégé state learning goal orientation will be positively associated with protégé post-mentoring self-efficacy.*

Furthermore, it seems probably that dialogue interactivity will mediate the relationship of protégé learning goal orientation and gains in self-efficacy. Specifically, as previously hypothesized, individual higher in state learning goal orientation will be likely be more interactive than those lower in the construct. Furthermore, through the increased interactivity, it is likely that increased gains in self-efficacy will be obtained for protégés. Specifically, as

protégés begin eliciting information and confirmation from their mentors, they will begin to feel more confident about their respective intended academic courses of action. Through increased interactivity, protégés can guide their mentors to focus on those things which are of most concern to the protégé, and in turn receive the desired remediation and guidance. In support of this notion, Smith-Jentsch et al. (in prep) found that learning goal orientation was related to dialogue interactivity, and dialogue interactivity was related to gains in self-efficacy. Hence, it was proposed that:

*Hypothesis 17. Dialogue interactivity will partially mediate the relationship between protégé learning goal orientation and protégé post-mentoring self-efficacy.*

#### Summary

In conclusion, the current research will examine the effect of training mentors, protégés, or both on state goal orientation, and in turn the effects on mentoring processes, and relationship outcomes. The results of this study will address the need for research into the specific components of training that lead to more efficient mentoring relationships, and in turn, provide clues to how best prepare for such a formal program. In turn, practical implications are evident in that formal mentoring participants can be prepared in the most pragmatic way possible as to increase the benefits accrued to protégés.



## CHAPTER THREE: METHODOLOGY

### Experimental Design

Protégés were assigned to mentors based on availability (i.e., protégés were matched with a mentor who had similar mentoring session availability). Then, dyads were randomly assigned to conditions. Specifically, mentors and protégés were assigned to either receive training designed to foster effective goal orientation states, or assigned to a training condition where they focused on computer-mediated communication (e.g., emoticon and acronym usage). Computer-mediated communication training was chosen as a control comparison for this study for several reasons. First, it was hoped that the information relayed would be beneficial to participants in their mentoring relationships. Secondly, it was hoped that participants would enjoy participating in the training, and believe it to be relevant. And finally (and most importantly), the training should not have affected the process behaviors that were believed to be affected by the goal orientation training. This resulted in four different conditions were utilized in this study: (a) goal orientation trained mentor and protégé; (b) goal orientation trained mentor, computer-mediated communication trained protégé; (c) computer-mediated communication trained mentor, goal orientation trained protégé; and (d) computer-mediated communication trained mentor and protégé. Thus, a two-by-two factorial design was utilized.

### Participants

Initially, over 260 participants were recruited for the mentoring program. However, the requirement to attend an on-campus training appeared to present a major obstacle to a large number of the participants. Eighty mentors and protégés attended training, which resulted in 22 dyads in the goal orientation mentor and protégé condition; 18 in the computer-mediated

communication mentor, goal orientation protégé condition; 20 in the goal orientation mentor, computer-mediated communication protégé condition; and 20 in the computer-mediated communication mentor and protégé condition. Six of the remaining dyads did not complete the entire program, resulting in 72 dyads with complete data. Of the eight dyads that did not complete the program, two of the dyads were in the condition in which both mentors and protégés received goal orientation training, two dyads were in the goal orientation training for the mentor-only condition, three of the dyads were in the protégé-only goal orientation training condition, and one dyad was in the computer-mediated communication training for both the mentor and protégé.

Protégés were recruited through a variety of means, including classroom recruitment in several large Introductory Psychology courses, flyers posted in all buildings on campus (See Appendix B), and through a mass email sent to all freshmen. Protégés had a mean age of 17.96 years ( $SD = .46$ ), whereas mentors had a mean age of 23.51 years ( $SD = 6.29$ ). Forty-five of the protégés were Caucasian, 14 African American, 18 Hispanic, and 3 were Asian. Protégés represented a large number of majors (i.e., 37 majors, with 3 individuals undeclared). Mentors were recruited from flyers in all buildings on campus (See Appendix C), through a mass email sent to all juniors and seniors, and also from recruitments at honor societies on campus. Mentors came from 27 different majors, with 9 of them majoring in psychology. Mentors consisted of 58 Caucasians, 5 African Americans, 4 Hispanics, 2 Asians, 1 Pacific Islander, and 7 who were of another ethnicity. There were 61 female (19 male) mentors and coincidentally also protégés. A large portion of the protégé participants received experimental credit, which could be applied toward their classes, for participation. A few mentors also received credit, but most participated

to have something to add to their curriculum vitas, to receive a letter of participation that we provided upon completion, or for intrinsic motives.

*Power analysis.* In order to determine the number of dyads needed to identify an effect if present, a power analysis was conducted before the onset of the study. First, articles examining some form of manipulation of goal orientation were examined, uncovering that effects ranged anywhere from a small effect (e.g., .12 for state avoid goal orientation and performance found by Day, Espejo, Kowollik, Boatman, & McEntire, 2007) to well into the .30 range depending on the design (e.g., .35 for pre-to post differences for several variables compiled together found by Breland and Donovan, 2005). Specifically, on average, it appears that more controlled experiments obtained larger effect sizes (likely due to less within-person variability offered by such control). Thus, the current study will also be highly controlled (e.g., total amount of time and sessions, same time-period, matched versus self-selection, utilizing same standardized interface), an effect size of .30 is reasonably expected. Next, G\*Power 3.0.3 (Faul, Lange, & Buchner, in press) was used to examine what sample size would be required in order to obtain statistically significant results, if the proposed effect is indeed present. Thus, given our sample size of 74 dyads, it should be sufficient for utilizing multiple regression with up to 6 predictors for identifying an anticipated effect of .31 (Power of .95 and an  $\alpha$  of .05).

## Procedure

### *Participant Recruitment and Condition Assignment*

Participants were initially directed to a website, which provided them with an overview of the program and other additional information (e.g., contact information, general mentoring information). Participants were asked to sign up initially on the website, at which time they

provided their name, contact information, whether they wished to sign up as a mentor or protégé, current GPA, status (e.g., Freshmen) and their availability for mentoring sessions. Participants received a confirmation through email, assigning them a participant ID (e.g., Socrates 301). Once participant recruitment was completed, mentors and protégés were paired with one another based upon availability.

In order to counter to counter-balance conditions in regards to gender composition, a spreadsheet with gender combinations (i.e., male/male, female/male, male/female, female/female) was used, with an auto-sum function at the bottom of the column. Dyads were placed into condition based solely on their gender combination and their order in the spreadsheet. Thus, the first male protégé/male mentor dyad was placed into the first condition, and the second dyad of this combination was placed into the second combination, and this continued in this manner until all gender compositions were assigned. In general, gender was even across conditions. However, the protégé goal orientation training/mentor computer-mediated communication condition ended up slightly different as it did not have any male/male dyads (see Table 1).

Table 1: *Condition and Dyad Gender Composition.*

Condition	Mentor: Goal Orientation Training	Mentor: Computer-Mediated Communication Training
Protégé: Goal Orientation Training	12 Female Mentor/Female Protégé Dyads 5 Male Mentor/Female Protégé Dyads 2 Female Mentor/Male Protégé Dyads 3 Male Mentor/Male Protégé Dyads	12 Female Mentor/Female Protégé Dyads 2 Male Mentor/Female Protégé Dyads 4 Female Mentor/Male Protégé Dyads 0 Male Mentor/Male Protégé Dyads
Protégé: Computer-Mediated Communication Training	13 Female Mentor/Female Protégé Dyads 2 Male Mentor/Female Protégé Dyads 3 Female Mentor/Male Protégé Dyads 2 Male Mentor/Male Protégé Dyads	13 Female Mentor/Female Protégé Dyads 2 Male Mentor/Female Protégé Dyads 3 Female Mentor/Male Protégé Dyads 3 Male Mentor/Male Protégé Dyads

Once assigned to conditions, participants were emailed with several potential training dates/times that they could attend. Times were systematically changed across days, and time periods for all four conditions (to maximize individuals' ability to attend, and to remove any potential confounds with availability and condition). All participants received some information electronically before formally coming to the lab to prepare them for their mentoring sessions: a handbook with information regarding the university, the university's Golden Rules outlining non-acceptable behavior, instruction regarding CMC, and guidelines for utilizing the chat interface (e.g., how to login).

All participants had to attend a training session on campus (See Appendix D for training materials). Mentors attended sessions with other mentors, and protégés with other protégés. Upon arrival, participants were instructed regarding the process of informed consent, and protégés and mentors provided their signatures acknowledging informed consent on their respective forms. Participants then began receiving the lecture portion of their training, which was followed by practice in both training programs. Both the computer-mediated communication

and goal orientation training sessions were an hour long. Each type of training will be discussed in turn.

### *Computer-Mediated Communication Training*

*Lecture.* Those participants in the computer-mediated communication training received information regarding mentoring in general, the website, basic guidelines for participating in the program, and some general information about computer-mediated communication. Information was tailored for mentors and protégés, although the information in general was similar. Participants in this training received additional information about emoticons and acronyms that the goal orientation training participants did not receive.

*Practice.* Participants in this training condition received a document with various emoticons and acronyms, which they were asked to complete. Participants went through and wrote out what the various symbols and acronyms represented in a game-style format where participants attempted to be the most ‘computer-savvy’. Upon completion of this task, the instructor went over the correct answers with participants, and gave them an answer sheet for the emoticon and acronym form. Then, participants were asked to write an introductory email to their mentors/protégés that they were instructed to type and send once obtaining their login information. Participants were also instructed to set goals for themselves and their partners before the completion of each mentoring session.

### *Goal Orientation Training*

*Lecture.* Those participants in the goal orientation training received the same general information that those in the computer-mediation communication training, including the same information about mentoring, the website, basic guidelines for participating in the mentoring program, and general information about computer-mediated communication. Instead of receiving

extra information about the use of emoticons and acronyms in computer-mediated communication, participants in this condition received several slides that attempted to elicit high states of learning goal orientation and low states of avoid goal orientation. Specifically, it was intended that the training would set a frame consistent with these goals, that participant goal setting would be consistent with these goals, and finally, feedback in the practice session would help to fulfill these goals. Mentors received training in regards to how to effectively utilize these behaviors to provide mentoring, whereas protégés learned the same constructs but from the perspective of obtaining and benefiting from information from the relationship.

*Practice.* Mentors and protégés in this condition received a list of emoticons and acronyms with answers, but these were not formally discussed. Individuals in this condition were given several examples of text, from fictitious mentoring transcripts, that might occur in the course of their mentoring relationships and asked to respond to mentor or protégé message. This presented opportunities for mentors and protégés to respond with behaviors typically associated with high states of learning goal orientation and low states of avoid goal orientation. For example, mentors received some example questions/statements from hypothetical protégés whereas protégés received some example questions/statements from hypothetical mentors. Participants also had to practice setting appropriate goals for themselves and their partners. They received feedback in this portion to focus on setting process-oriented versus outcome-oriented goals. Participants had to write their answers to all practice questions, and also provide them aloud, at which point verbal feedback was given to them. Participants in this training condition were also asked to write a sample introductory email upon receiving their login information, and to set weekly goals for themselves and their partners before the completion of each mentoring session.

### *Post-Training*

Upon completion of the training (both the goal orientation training and the control), participants were directed to a computer to complete their first set of measures. See Table 2 for a list of all measures. Once complete, participants were thanked and reminded that we would be in contact with them shortly by email.



Table 2: *List of Measures*

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***Pre-training Measures (Time 1):***

- *Mentors*
  - Demographic Form
  - Trait Goal Orientation
    - Learning Orientation
    - Avoid Orientation
- *Protégés*
  - Demographic Form
  - Trait Goal Orientation
    - Learning Orientation
    - Avoid Orientation
  - Academic Stress
  - Academic Self-Efficacy

***Weekly Pre-Session Measures:***

- *Mentors and Protégés*
  - State Goal Orientation
    - Learning Orientation
    - Avoid Orientation

***Post-mentoring Measures (Time 2):***

- *Mentors*
  - Psychosocial and Career Support Function Provided
- *Protégés*
  - Psychosocial and Career Support Functions Received
  - Academic Stress
  - Academic Self-Efficacy

***Coded Measures:***

- Interactivity
- Goal-Oriented Behaviors
  - Information/Feedback Seeking Behaviors
  - Negative Self-Disclosure

### *Meeting Online*

Mentors and protégés received notification of their scheduled chat time at the time of training, and also received an email following training with this information. Automatically generated emails with a link leading participants to the chat interface were sent each morning of a chat session. This link sent them first to fill out their state goal orientation measure, and then dropped them off at the chat interface website upon completion of the measure. At their scheduled time, when participants logged in to the website, a chat interface was available to users (See Appendix E for a screen shot of the chat interface). In other words, the chat interface was only apparent at the time of their scheduled chat session. Researchers supervised that mentors and protégés arrived, and called missing individuals within 5 minutes of the chat start time to remind them to login.

Once logged in, mentors appeared as ‘Socrates’ and protégés appeared as ‘Plato’ (both followed by a number indicating their participant number). Thus, no identifying information (i.e., name, gender) were provided to participants regarding their mentor/protégé. Mentors and protégés met for half an hour a week, for four consecutive weeks, online at the same time and day each week. Email functionality was enabled in the website allowing for mentors and protégés to communicate with one another outside of sessions (however, under the control and anonymity offered by the website).

Within an hour of completing the last formal mentoring session, mentors and protégés were emailed a link to complete the second set of measures. Most participants filled out the survey at this point in time. Transcripts of chat sessions and emails were retrieved from the

website at this point in time. Transcripts were formatted and prepared, allowing for us to code for the various process variables of interest providing the final source of data.

### Measures

Participants were first introduced to the informed consent process (and signatures collected) before participating in the training session. The informed consent process and measures will be discussed in turn.

*Informed consent.* Participants were informed of the general nature of the study (i.e., examining the effects of training on mentoring processes and outcomes), and informed of the requirements of the study. Furthermore, anticipated potential benefits were reviewed, potential concerns, who to contact regarding concerns, and how the data was to be stored were thoroughly reviewed with each participant. Two forms were created (See Appendix F); the first form was specifically for participants over the age of 18 whereas the second was for the participants of parents 17 and under.

*Demographic information.* Several questions assessing demographic information were collected, including information regarding gender, race, academic status, GPA, SAT scores, age and computer connection type (e.g., broadband, telephone line). See Appendix G for protégés' and H for mentors' demographic measures.

*Trait goal orientation.* The learning and avoid sub-scales of the trait goal orientation scale constructed by Vandewalle (1997) were used (See Appendix I). Five items assessed learning goal orientation and four assessed avoid goal orientation. An example of a learning goal orientation item was “I am willing to select a challenging assignment that I can learn a lot from”, and an example of an avoid goal orientation item was “I would avoid taking on a new task if

there was a chance that I would appear rather incompetent to others”. This measure used a 6-point Likert scale (1 *strongly disagree* to 6 *strongly agree*). Using coefficient alpha, the estimated reliability for protégés’ trait learning goal orientation items was .915 and for avoid goal orientation items it was .856. The estimated reliability for mentors was .845 for learning goal orientation items and .848 for avoid goal orientation items.

*Academic stress.* Three items were used from the Allen, McManus, and Russell (1999) academic-related stress questionnaire (See Appendix J). These items examine the extent to which individuals report experiencing stress related to academic issues. An example item was “I have been under a great deal of tension this semester”. This scale again used a 6-point Likert (1 *strongly disagree* to 6 *strongly agree*). This measure was collected both at the first data collection and upon completion of the formal mentoring sessions, thus allowing for examination of changes in stress over the course of the semester. An alpha coefficient of .759 was obtained for the pre-program measure items, and an alpha of .834 was obtained for the post-program measure items.

*Academic self-efficacy.* The College Self Efficacy Inventory (Solberg, O'Brien, Villarreal, Kennel, & Davis, 1993; CSEI) was used to assess academic self-efficacy (See Appendix K). This measure consisted of 15 items, utilizing a 6-point Likert, 1 *not at all confident* to 6 *extremely confident*. Participants rated the extent to which they felt confident to complete various academic related tasks, such as “Research a term paper” or “Write course papers”. This measure was also collected before and after the formal mentoring sessions. An alpha of .912 was obtained for the pre-program measure items and an alpha of .933 was obtained for the post-program measure items.

### *Pre-Session Measure*

*State goal orientation.* This scale was developed for the purpose of this study, and assessed state learning and avoid orientation with four (two for each construct) mentoring-specific questions. This scale utilized a 6-point Likert (1 strongly disagree to 6 strongly agree). The mentor and protégé versions consisted of the same items; however items were tailored for each. For example, a protégé state learning goal orientation item was “Today, I am most interested in talking about strategies I can use to reach my fullest potential” whereas the mentor state learning goal orientation question was “What my protégé needs most from me today is knowledge that will help him/her to reach his/her fullest potential”. Similarly, a state avoid goal orientation item for protégés was “Today, I am most interested in talking about how I can avoid situations where I may fail” whereas the mentor item read “What my protégé needs most from me today is knowledge that will help him/her to avoid situations where he/she may fail”. See Appendix L (for protégés) and M (for mentors). In order to determine consistency of this construct across the mentoring sessions, coefficient alpha was examined for states using the items from the four sessions. Specifically, both items for each construct were averaged for each session then coefficient alpha was examined using the four averages. Coefficient alpha for mentors for state learning goal orientation was .865 and .754 for state avoid goal orientation. Coefficient alpha for protégés’ state learning goal orientation was .918 and .845 for state avoid goal orientation. Thus, given the reasonably high consistency of these scores across sessions, the four sessions were averaged to create an overall indicator for each of these constructs.

### *Time 2 Measures (Post-Program Measures)*

*Mentoring functions received/provided.* Allen, McManus, & Russell’s (1999) mentoring functions scale was used to assess perceptions of the amount of psychosocial support and

academic career development functions that had been provided during the course of the mentoring relationship. Specifically, 14 of the items that assessed psychosocial functions were used from this scale, whereas 11 items that assessed academic career development functions were used. This scale again used a 6-point Likert (1 *strongly disagree* to 6 *strongly agree*). Items were identical for protégés (See Appendix N for psychosocial functions and O for career development functions) and mentors (See Appendix P for psychosocial and Q for career development functions), except that the questions were modified to reflect whether each question was from the mentor or protégé perspective. For example, a career support item for protégés read “My mentor reduced unnecessary risks that could threaten the possibility that I would advance through my program of study”, whereas the mentor item was “I helped reduce unnecessary risks that could threaten the possibility that my protégé would advance through his/her program of study”. For psychosocial support, an example protégé item was “My mentor discussed my questions and concerns regarding feelings of competence”: whereas the mentor item was “I discussed my protégé’s questions and concerns regarding feelings of competence”. Protégé items for this scale resulted in an alpha coefficient of .916 for psychosocial functions and .923 for career development functions. Mentor items resulted in an alpha coefficient of .862 for psychosocial functions and also .864 for career development functions.

### *Coded Mentoring Processes*

Upon completion of the formal mentoring portion of the study, four undergraduate research assistants were trained to code for the various process variables of interest. Transcripts from a previous mentoring study that used the same website interface and identical participant population were used to train coders. Raters met in person twice a week for an hour each meeting, in addition to using an electronic posting board to address concerns and questions



during the coding process. Raters utilized various colors to highlight instances of the constructs of interest in the word documents. Specifically, raters coded for feedback/information seeking behaviors and negative self-disclosure behaviors. Upon completion of each transcript, all four raters' coding were placed side by side in an electronic document, and projected on the wall. Then, each and every discrepancy amongst the raters for each sentence was discussed until an agreement was reached. This process occurred over the course of several months, reviewing approximately 120 transcripts in this manner, until almost perfect agreement appeared to have been reached. At this point in time, raters were instructed that they could no longer communicate with one another (but could ask me questions if the arose), and were provided with transcripts from the present study for coding. Upon completion of each, they were emailed back to me, and a word macro was used to retrieve word counts for each construct. Word counts were chosen to assess coded processes, versus frequency counts, so that the overall amount of these functions could be considered. Specifically, it seemed reasonable to assume that one instance of a one-word statement of one of these behaviors should not be as effective as one-instance that consisted of 10 words. In other words, I did not want "Why?" to be waited equally as "Have you considered some of your other options, such as taking Gen Psych next semester instead?".




*Inter-rater reliability.* Inter-rater reliability was assessed with a sample of ratings coded by each rater making ratings on each respective process variable. A sample of 10 dyads (i.e., 40 session transcripts plus emails) were utilized for assessing inter-rater reliability. As suggested by Shrout & Fleish (1979), intra-class correlations were obtained, treating raters as items. This technique allows for the examination of the accuracy of the assumption that each rater is 'interchangeable'. Specifically, given that the remainder of transcripts were divided among raters, the majority of transcripts received ratings from a single rater. Thus, it is imperative that

ratings are not only ‘correlated’ but that they are in agreement. Ratings of the reliability sample (i.e., the forty transcripts that were rated by all four raters) were averaged for the four raters for these transcripts. The remained 256 transcripts were divided by the four raters, each coding 64 of these individually.

Three different types of process variables were collected in total, including: interactivity feedback/information seeking behaviors, and negative self-disclosure behaviors. Each will be discussed in turn.

*Dialogue interactivity.* Dialogue interactivity was coded by assessing each time there was a transition in speakers (See Appendix R). Thus, each time a speaker change occurred, this was counted as one instance of dialogue interactivity. In the following example, three speaker transitions are present:

 Socrates: Hi Plato! How is it going this week?  
 Plato: Ugh...

 Plato: It’s been rough. Exam after exam!  
 Socrates: Really? How many did you have?  
 Plato: Biology is horrible! I’m sure I failed... Plus, I had two other exams.

Data for this variable was automatically generated using a word macro designed for this purpose (thus, removing any human error from attempting to count the transitions). Dialogue interactivity was summed for each session. Then the consistency was examined across the four sessions, using alpha coefficients as an indicator of reliability. A reliability of .88 was obtained, indicating



relative stability of this behavior over the four sessions. The four sessions were then averaged to provide an overall indicator of this construct.

*Information/feedback seeking.* Given that individuals high in learning goal orientation are more likely to seek information and feedback so that they can more effectively master relevant tasks, information/feedback seeking consisted of any attempt to seek information. Specifically, any form of question eliciting some form of information or feedback fell under this category (See Appendix S). An example of mentor information/feedback seeking might be “How do you feel you’re doing in Biology?” whereas a protégé example might read “Where can I go to get free tutoring?”. Examining the reliability of the raters for the 40 reliability sample transcripts, raters for protégé word counts obtained an agreement of .980 ( $\alpha = .997$ ). Raters for mentor word counts obtained an agreement of .547 ( $\alpha = .848$ ). Once instances of the behavior were identified, words were counted for each session providing an indicator for each session. Examining the consistency of these behaviors across the course of the four sessions for protégés, word counts obtained an alpha of .739. For mentors, an alpha of .880 was obtained across sessions for this construct. The total word counts for the four sessions and emails were averaged to provide an overall indicator for this construct that was used in subsequent analyses.

*Negative self-disclosure.* Individuals high in avoid goal orientation are likely to not want to disclose information that demonstrates their weaknesses or personally embarrassing information. An example of a mentor negative self-disclosure might have been “I felt like such an idiot after I failed the exam” and for a protégé an example might be “I’m really afraid I’m not really smart enough compared to the other students”. (See Appendix T for additional examples). For the reliability sample of 40 transcripts, raters obtained an agreement index for protégés of .485 ( $\alpha = .870$ ), and for mentors, raters obtained an agreement index of .700 ( $\alpha = .916$  for

negative self-disclosure. Once instances of the behavior were identified, words were counted for each session were summed providing an indicator for each session. Examining the consistency of these behaviors across the four sessions, negative self-disclosure word counts had an alpha of .799 for protégés. For mentors, negative self-disclosure had an alpha of .845 across the four sessions. The total word counts for the four sessions and emails were averaged to provide an overall indicator for this construct that was used in subsequent analyses.

*Psychosocial statements.* Psychosocial statements consisted of mentor statements intended to provide psychosocial support to the protégé, such as statements providing encouragement or praise (e.g., Great job with that exam! You're awesome!) or statements that were supportive to the mentoring relationship in general (e.g., Thank you so much for updating me on your status!) (See Appendix U for additional examples). For the reliability sample of 40 transcripts, raters obtained an agreement index of .803 ( $\alpha = .942$ ). Once instances of the behavior were identified, word counts for each instance were summed providing an indicator for each session. Examining the consistency of these behaviors across the four sessions, psychosocial statements had an alpha of .883. The total word counts for the four sessions and emails were averaged to provide an overall indicator for this construct that was used in subsequent analyses.

*Career information.* Career information consisted of any information that the mentor relayed to the protégé, with the intent of providing him/her academic, job, or career-related knowledge. For example, a mentor might have statement such as “To register for classes, you should log onto my.ucf.edu” or “To find a job, you may want to check the newspaper and post your resume somewhere” (See Appendix V for additional examples). For the reliability sample of 40 transcripts, raters obtained an agreement index of .804 ( $\alpha = .943$ ). Once instances of the behavior were identified, words were summed providing an indicator for each session.

Examining the consistency of these behaviors across the four sessions, career information word counts had an alpha of .590. The total word counts for the four sessions and emails were averaged to provide an overall indicator for this construct that was used in subsequent analyses.

## CHAPTER FOUR: RESULTS

All statistical analyses were conducted using SPSS (version 14.0). First, some general findings and information regarding the training are presented. Then, hypothesis results are presented in the following section. Numerous supplementary analyses accompany hypothesis results in order to obtain a better understanding of the relationships examined. And finally, a table with a summary of the results of the hypothesis tests concludes this section.

### General Findings

Means, standard deviations, and intercorrelations among all study variables are presented in Table 3. In this section, the relation of states and traits of goal orientation is examined followed by the relations of mentor and protégé perceived mentoring functions.

Table 3: Means, Standard Deviations, and Intercorrelations Among Study Variables.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
<b>Post-Training Measures</b>							
1. Protégé Training Type ( <i>0 = CMC, 1 = GO</i> )	0.49	0.50	*				
2. Mentor Training Type ( <i>0 = CMC, 1 = GO</i> )	0.53	0.50	.09	*			
3. Protégé Trait Learning Goal Orientation	4.47	1.05	.01	.08	.92		
4. Protégé Trait Avoid Goal Orientation	2.89	1.04	-.18	.09	-.04	.86	
5. Protégé Pre-Program Academic Stress	2.61	1.07	.09	-.10	-.09	-.12	.80
6. Protégé Pre-Program Academic Self-Efficacy	4.42	0.92	-.07	.12	.37**	-.16	-.30**
7. Mentor Trait Learning Goal Orientation	5.23	0.62	.27*	.28*	.20	-.01	.01
8. Mentor Trait Avoid Goal Orientation	2.44	0.86	-.27*	-.13	.19	.01	.00
<b>Pre-Session Measures</b>							
9. Protégé State Learning Goal Orientation	4.29	1.13	.29*	.16	.33**	-.04	-.02
10. Protégé State Avoid Goal Orientation	3.38	0.80	.14	.08	-.05	.10	.05
11. Mentor State Learning Goal Orientation	5.12	0.82	.02	-.13	-.04	-.17	.08
12. Mentor State Avoid Goal Orientation	3.42	0.79	-.18	-.23	.04	.06	.06
<b>Process Variables</b>							
13. Dialogue Interactivity	35.61	14.54	-.10	-.13	.04	.16	.03
14. Protégé Information/Feedback Seeking	39.69	18.78	.01	-.11	.03	-.08	-.05
15. Protégé Negative Self-Disclosure	57.38	47.43	.08	-.25*	-.10	-.11	.23*
16. Mentor Personal Statements	145.11	70.99	-.07	.19	-.09	.19	-.11
17. Mentor Career Information	86.14	63.27	-.01	.14	-.12	.08	.05
18. Mentor Information/Feedback Seeking	82.12	42.65	-.02	-.02	-.08	.08	-.01
19. Mentor Negative Self-Disclosure	112.35	79.68	-.06	.08	-.19	.16	-.06
<b>Outcome Variables</b>							
20. Protégé-Reported Psychosocial Support Functions Received	4.87	0.80	.14	-.01	.25*	-.10	.13
21. Protégé-Reported Career Support Functions Received	4.02	1.03	.28*	.07	.15	-.14	.08
22. Protégé Post-Program Academic Stress	3.00	1.36	-.15	-.11	.08	.04	.67
23. Protégé Post-Program Academic Self-Efficacy	4.83	0.90	-.01	.24*	.28*	-.15	-.18
24. Mentor-Report Psychosocial Support Provided	4.64	0.70	-.03	-.01	.16	-.04	-.01
25. Mentor-Report Career Support Provided	3.74	0.99	.08	.06	.09	-.09	-.14

Notes. Sample sizes range from 69 to 72, based on participants that completed 4 full sessions. \* $p < .05$ ,  $p < .01$ , two-tailed.

<i>Variable</i>	<i>M</i>	<i>SD</i>	6	7	8	9	10
<b><i>Post-Training Measures</i></b>							
1. Protégé Training Type ( <i>0 = CMC, 1 = GO</i> )	0.49	0.50					
2. Mentor Training Type ( <i>0 = CMC, 1 = GO</i> )	0.53	0.50					
3. Protégé Trait Learning Goal Orientation	4.47	1.05					
4. Protégé Trait Avoid Goal Orientation	2.89	1.04					
5. Protégé Pre-Program Academic Stress	2.61	1.07					
6. Protégé Pre-Program Academic Self-Efficacy	4.42	0.92	.91				
7. Mentor Trait Learning Goal Orientation	5.23	0.62	-.05	.85			
8. Mentor Trait Avoid Goal Orientation	2.44	0.86	.00	-.45**	.85		
<b><i>Pre-Session Measures</i></b>							
9. Protégé State Learning Goal Orientation	4.29	1.13	.23	.15	.02	.92	
10. Protégé State Avoid Goal Orientation	3.38	0.80	.00	-.05	-.07	.51**	.85
11. Mentor State Learning Goal Orientation	5.12	0.82	-.05	.18	-.20	-.11	.04
12. Mentor State Avoid Goal Orientation	3.42	0.79	-.10	-.25	.13	-.21	.02
<b><i>Process Variables</i></b>							
13. Dialogue Interactivity	35.61	14.54	-.26*	.03	.05	-.11	-.14
14. Protégé Information/Feedback Seeking	39.69	18.78	.06	-.10	.01	.07	-.12
15. Protégé Negative Self-Disclosure	57.38	47.43	-.17	.16	-.02	-.10	-.02
16. Mentor Personal Statements	145.11	70.99	-.24*	-.16	.01	-.08	-.06
17. Mentor Career Information	86.14	63.27	-.37**	-.12	.18	-.08	.00
18. Mentor Information/Feedback Seeking	82.12	42.65	-.18	.20	-.03	.01	.20
19. Mentor Negative Self-Disclosure	112.35	79.68	-.28*	.05	.05	-.19	-.08
<b><i>Outcome Variables</i></b>							
20. Protégé-Reported Psychosocial Support Functions Received	4.87	0.80	.05	.13	.04	.42	.02
21. Protégé-Reported Career Support Functions Received	4.02	1.03	.05	.12	.00	.45	.08
22. Protégé Post-Program Academic Stress	3.00	1.36	-.20	.02	.00	.12	.16
23. Protégé Post-Program Academic Self-Efficacy	4.83	0.90	.62**	.01	.08	.31	.07
24. Mentor-Report Psychosocial Support Provided	4.64	0.70	-.14	.21	-.12	-.13	.05
25. Mentor-Report Career Support Provided	3.74	0.99	-.13	.06	.05	.01	.15

*Notes.* Sample sizes range from 69 to 72, based on participants that completed 4 full sessions. \* $p < .05$ ,  $p < .01$ , two-tailed.

<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>
<b><i>Post-Training Measures</i></b>							
1. Protégé Training Type ( <i>0 = CMC, 1 = GO</i> )	0.49	0.50					
2. Mentor Training Type ( <i>0 = CMC, 1 = GO</i> )	0.53	0.50					
3. Protégé Trait Learning Goal Orientation	4.47	1.05					
4. Protégé Trait Avoid Goal Orientation	2.89	1.04					
5. Protégé Pre-Program Academic Stress	2.61	1.07					
6. Protégé Pre-Program Academic Self-Efficacy	4.42	0.92					
7. Mentor Trait Learning Goal Orientation	5.23	0.62					
8. Mentor Trait Avoid Goal Orientation	2.44	0.86					
<b><i>Pre-Session Measures</i></b>							
9. Protégé State Learning Goal Orientation	4.29	1.13					
10. Protégé State Avoid Goal Orientation	3.38	0.80					
11. Mentor State Learning Goal Orientation	5.12	0.82	.87				
12. Mentor State Avoid Goal Orientation	3.42	0.79	.20	.75			
<b><i>Process Variables</i></b>							
13. Dialogue Interactivity	35.61	14.54	-.02	.03	.88		
14. Protégé Information/Feedback Seeking	39.69	18.78	-.10	-.10	.18	.74	
15. Protégé Negative Self-Disclosure	57.38	47.43	.09	-.05	.17	-.02	.80
16. Mentor Personal Statements	145.11	70.99	-.26*	-.08	.48**	.07	-.30**
17. Mentor Career Information	86.14	63.27	.00	-.17	.34	.22	.10
18. Mentor Information/Feedback Seeking	82.12	42.65	.04	-.09	.45	-.22	.32**
19. Mentor Negative Self-Disclosure	112.35	79.68	-.23	.09	.21	.06	.26*
<b><i>Outcome Variables</i></b>							
20. Protégé-Reported Psychosocial Support Functions Received	4.87	0.80	.03	-.03	.24*	.18	.00
21. Protégé-Reported Career Support Functions Received	4.02	1.03	.08	.03	.18	.12	-.11
22. Protégé Post-Program Academic Stress	3.00	1.36	-.08	.02	.14	.04	.11
23. Protégé Post-Program Academic Self-Efficacy	4.83	0.90	-.03	-.03	-.23	.09	-.20
24. Mentor-Report Psychosocial Support Provided	4.64	0.70	.22	.12	.13	.02	.18
25. Mentor-Report Career Support Provided	3.74	0.99	.11	.08	.02	.05	.17

*Notes.* Sample sizes range from 69 to 72, based on participants that completed 4 full sessions. \* $p < .05$ , \*\* $p < .01$ , two-tailed.

<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>16</i>	<i>17</i>	<i>18</i>	<i>19</i>	<i>20</i>
<b><i>Post-Training Measures</i></b>							
1. Protégé Training Type ( <i>0 = CMC, 1 = GO</i> )	0.49	0.50					
2. Mentor Training Type ( <i>0 = CMC, 1 = GO</i> )	0.53	0.50					
3. Protégé Trait Learning Goal Orientation	4.47	1.05					
4. Protégé Trait Avoid Goal Orientation	2.89	1.04					
5. Protégé Pre-Program Academic Stress	2.61	1.07					
6. Protégé Pre-Program Academic Self-Efficacy	4.42	0.92					
7. Mentor Trait Learning Goal Orientation	5.23	0.62					
8. Mentor Trait Avoid Goal Orientation	2.44	0.86					
<b><i>Pre-Session Measures</i></b>							
9. Protégé State Learning Goal Orientation	4.29	1.13					
10. Protégé State Avoid Goal Orientation	3.38	0.80					
11. Mentor State Learning Goal Orientation	5.12	0.82					
12. Mentor State Avoid Goal Orientation	3.42	0.79					
<b><i>Process Variables</i></b>							
13. Dialogue Interactivity	35.61	14.54					
14. Protégé Information/Feedback Seeking	39.69	18.78					
15. Protégé Negative Self-Disclosure	57.38	47.43					
16. Mentor Personal Statements	145.11	70.99	.88				
17. Mentor Career Information	86.14	63.27	.39**	.59			
18. Mentor Information/Feedback Seeking	82.12	42.65	.13	.21	.88		
19. Mentor Negative Self-Disclosure	112.35	79.68	.28*	.37**	.29*	.85	
<b><i>Outcome Variables</i></b>							
20. Protégé-Reported Psychosocial Support Functions Received	4.87	0.80	.08	-.03	-.02	-.17	.92
21. Protégé-Reported Career Support Functions Received	4.02	1.03	.18	.04	.00	-.10	.73**
22. Protégé Post-Program Academic Stress	3.00	1.36	-.02	.00	-.03	-.10	.15
23. Protégé Post-Program Academic Self-Efficacy	4.83	0.90	-.11	-.17	-.20	-.24*	.16
24. Mentor-Report Psychosocial Support Provided	4.64	0.70	.03	.20	.16	.13	.13
25. Mentor-Report Career Support Provided	3.74	0.99	-.02	.28*	.21	.15	.01

*Notes.* Sample sizes range from 69 to 72, based on participants that completed 4 full sessions. \* $p < .05$ ,  $p < .01$ , two-tailed.

<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>21</i>	<i>22</i>	<i>22</i>	<i>24</i>	<i>25</i>
<b><i>Post-Training Measures</i></b>							
1. Protégé Training Type ( <i>0 = CMC, 1 = GO</i> )	0.49	0.50					
2. Mentor Training Type ( <i>0 = CMC, 1 = GO</i> )	0.53	0.50					
3. Protégé Trait Learning Goal Orientation	4.47	1.05					
4. Protégé Trait Avoid Goal Orientation	2.89	1.04					
5. Protégé Pre-Program Academic Stress	2.61	1.07					
6. Protégé Pre-Program Academic Self-Efficacy	4.42	0.92					
7. Mentor Trait Learning Goal Orientation	5.23	0.62					
8. Mentor Trait Avoid Goal Orientation	2.44	0.86					
<b><i>Pre-Session Measures</i></b>							
9. Protégé State Learning Goal Orientation	4.29	1.13					
10. Protégé State Avoid Goal Orientation	3.38	0.80					
11. Mentor State Learning Goal Orientation	5.12	0.82					
12. Mentor State Avoid Goal Orientation	3.42	0.79					
<b><i>Process Variables</i></b>							
13. Dialogue Interactivity	35.61	14.54					
14. Protégé Information/Feedback Seeking	39.69	18.78					
15. Protégé Negative Self-Disclosure	57.38	47.43					
16. Mentor Personal Statements	145.11	70.99					
17. Mentor Career Information	86.14	63.27					
18. Mentor Information/Feedback Seeking	82.12	42.65					
19. Mentor Negative Self-Disclosure	112.35	79.68					
<b><i>Outcome Variables</i></b>							
20. Protégé-Reported Psychosocial Support Functions Received	4.87	0.80					
21. Protégé-Reported Career Support Functions Received	4.02	1.03	.92				
22. Protégé Post-Program Academic Stress	3.00	1.36	.05	.83			
23. Protégé Post-Program Academic Self-Efficacy	4.83	0.90	.12	-.18	.93		
24. Mentor-Report Psychosocial Support Provided	4.64	0.70	.15	.04	-.04	.86	
25. Mentor-Report Career Support Provided	3.74	0.99	.19	-.13	-.11	.72**	.86

*Notes.* Sample sizes range from 69 to 72, based on participants that completed 4 full sessions. \* $p < .05$ ,  $p < .01$ , two-tailed.



*Goal orientation measures.* Prior research on goal orientation has typically found that trait learning and trait avoid goal orientations are negatively correlated with one another. In the present study, mentor trait learning goal orientation and trait avoid goal orientation were negatively related [ $r = -.37, p < .01$ , two-tailed], however protégé trait learning goal orientation and avoid goal orientation traits were not [ $r = -.05, p = .66$ , two-tailed]. Contrary to expectations, both mentors' [ $r = .22, p = .05$ , two-tailed] and protégés' learning and avoid goal orientation state scores were positively related [ $r = .52, p < .01$ , two-tailed].

Although not formally hypothesized, it was expected that trait goal orientation would relate to individuals' likelihood of displaying states of goal orientation. Consistent with this, protégé trait learning goal orientation correlated with protégé state learning goal orientation [ $r = .30, p < .01$ , two-tailed], but protégé trait avoid goal orientation did not relate to protégé state avoid goal orientation [ $r = .09, p = .43$ , two-tailed]. The relation of mentor trait learning goal orientation and mentor state learning goal orientation [ $r = .20, p = .08$ , two-tailed] and the relation of mentor trait avoid goal orientation and state avoid [ $r = .19, p = .11$ , two-tailed] did not reach statistical significance.

*Mentoring process measures.* Mentor and protégé information/feedback seeking behaviors were negatively related (approaching significance),  $r = -.22, p = .06$  (two-tailed). Mentor and protégé negative self-disclosure behaviors were positively related,  $r = .26, p = .03$  (two-tailed). Mentor information/feedback seeking was positively related to protégé negative self-disclosure  $r = .32, p < .01$  (two-tailed). However, protégé information/feedback seeking behaviors were not related to mentor negative self-disclosure,  $r = .06, p = .62$  (two-tailed). Dialogue Interactivity was related to mentor information/feedback seeking ( $r = .45, p < .01$ , two-

tailed), to mentor psychosocial statements ( $r = .50, p < .01$ , two-tailed), and also to mentor career information ( $r = .34, p < .01$ , two-tailed). Dialogue interactivity approached significance with its relation to mentor negative self-disclosure ( $r = .21, p < .08$ , two-tailed), to protégé negative self-disclosure ( $r = .17, p = .16$ , two-tailed), and to protégé information/feedback seeking ( $r = .18, p = .13$ , two-tailed). Mentor career information approached significance with its relation to protégé information/feedback seeking ( $r = .22, p = .06$ , two-tailed), to mentor information/feedback seeking ( $r = .21, p = .08$ , two-tailed), and was statistically related to mentor negative self-disclosure ( $r = .37, p < .01$ , two-tailed). Mentor career information did not relate to protégé negative self-disclosure ( $r = .10, p = .41$ , two-tailed). Mentor psychosocial support related to protégé negative self-disclosure ( $r = .27, p = .03$ , two-tailed), to mentor information/feedback seeking ( $r = .55, p < .01$ , two-tailed), and approached statistical significance for mentor negative self-disclosure ( $r = .22, p = .07$ , two-tailed). Finally, protégé feedback seeking and protégé negative self-disclosure did not relate ( $r = -.02, p = .89$ , two-tailed) whereas mentor feedback seeking and mentor negative self-disclosure were related ( $r = .29, p = .01$ , two-tailed).

Given that perceptions should be indicative to some extent of actual behaviors that occur in a relationship, the similarity of mentors' and protégés' perceptions of mentoring functions were examined as well as correlations between coded indicators of career and psychosocial support. Protégé reported career support functions received and mentor reported career support functions given were related, ( $r = .24, p = .04$ , two-tailed). However, surprisingly, mentor reported psychosocial support functions provided and protégé reported psychosocial functions received did not relate, ( $r = .07, p = .54$ , two-tailed). Furthermore, mentor perceived career support functions and coded career information were related, ( $r = .28, p = .02$ , two-tailed) and mentor perceived psychosocial support functions and coded psychosocial support approached

significance, ( $r = .20, p = .09$ , two-tailed). Protégé perceived career support and coded career information were not related, ( $r = .04, p = .72$ , two-tailed), but protégé perceived psychosocial support functions and coded psychosocial support were headed in the anticipated direction although not significant, ( $r = .13, p = .27$ , two-tailed).

Previous research has repeatedly found that same-source ratings of psychosocial and career support functions are strongly and positively related (e.g., Allen, McManus & Russell, 1999). Perceived psychosocial and career support functions were positively related for both mentor ( $r = .67, p < .01$ , two-tailed) and protégé ratings ( $r = .76, p < .01$ , two-tailed). By contrast, coded career and psychosocial support was not significantly related ( $r = .18, p = .13$ , two-tailed).

*Similarity of participant perceptions by condition.* The similarity of mentor and protégé perceptions of psychosocial and career support functions provided were then examined by condition. Specifically, I examined correlations of perceived mentoring functions for mentors and protégés separately for dyads who partook in the same training and or different training. For those who received the same training, correlations between mentor and protégé perceptions of career and psychosocial support were more than twice the magnitude as those who received different training (See Table 4). In fact, mentor and protégé perceptions of psychosocial support were actually negatively related for those who had received different preparatory training. Dyads were then further broken down into the two same-training conditions (i.e., both received goal orientation training or computer-mediated communication training). The highest correlation between mentor and protégé perceptions was found when both had received goal orientation training.

Table 4: *Similarity of Mentor and Protégé Perceptions Regarding Mentoring Functions for Same and Different Mentor/Protégé Training Conditions.*

Training Types	Psychosocial Support	Career Support
Same Training Type for Mentors and Protégés	.45**	.35*
Different Training Type for Mentoring and Protégés	-.23	-.03
Condition	Psychosocial Support	Career Support
GO Protégé/GO Mentor	.53*	.41
CMC Protégé/GO Mentor	-.03	.33
GO Protégé/CMC Mentor	-.43	-.43
CMC Protégé/CMC Mentor	.39	.24

Note: \* $p < .05$ , \*\* $p < .01$ , two-tailed.

### Hypothesis Tests

Hypotheses were tested using simultaneous multiple regression unless otherwise indicated. Each hypothesis will be discussed in turn.

#### *Hypotheses 1 and 2: State Goal Orientation*

For this set of hypotheses, the overall sample was used (i.e., 80 mentors and 80 protégés were included in these analyses), whereas the remaining hypotheses and the correlation matrix were based on those dyads that completed the entire program (thus, based on data from 72 mentors and protégés).

The first hypothesis proposed that (a) protégés and (b) mentors who received goal orientation training would report higher states of learning goal orientation than those who did not. Both protégé condition ( $\beta = .31, p < .01$ , one-tailed) and protégé trait learning goal orientation ( $\beta = .29, p < .01$ , one-tailed) [ $F(2, 76) = 8.815, p < .01$ , adjusted  $R^2 = .17$ ] were unique predictors of protégé state learning goal orientation. Specifically, protégés in the goal

orientation training condition were more likely to have higher states of learning goal orientation than those in the computer-mediated communication condition over the course of the program. However, mentor condition ( $\beta = -.18, p = .07$ , one-tailed) did not reach statistical significance in predicting mentor state learning goal orientation, including mentor trait learning goal orientation ( $\beta = .24, p = .02$ , one-tailed) as a covariate,  $F(2, 76) = 2.794, p < .08$ , adjusted  $R^2 = .05$ . Thus, hypothesis 1a was supported, but not 1b.

The second hypothesis proposed that (a) protégés and (b) mentors who received goal orientation training would report lower states of avoid goal orientation than those who did not. Protégés did not statistically differ. Specifically, protégé condition did not relate to protégé state avoid goal orientation ( $\beta = .17, p = .08$ , one-tailed), including protégé trait avoid goal orientation as a covariate ( $\beta = .12, p = .15$ , one-tailed) [ $F(2, 76) = 1.310, p = .28$ , adjusted  $R^2 = .01$ ]. Given that protégé trait avoid goal orientation was not a significant predictor in this model, the covariate was removed and the model re-examined. However, even without the covariate, protégé condition still did not predict protégé state avoid ( $\beta = .14, p = .11$ , one-tailed), adjusted  $R^2 = .01$ .

Mentor condition related to mentor state avoid ( $\beta = -.20, p = .04$ , one-tailed), including mentor trait avoid goal orientation as a covariate ( $\beta = .17, p = .07$ , one-tailed),  $F(2, 76) = 3.002, p = .06$ , adjusted  $R^2 = .05$ . Given that mentor trait avoid did not reach statistical significance as a predictor, the model was also examined with this covariate removed. Without the covariate, mentor condition still predicted mentor state avoid ( $\beta = -.21, p = .03$ , one-tailed), adjusted  $R^2 = .03$ . Thus, mentors in the computer-mediated communication training condition were more likely to be higher in state avoid goal orientation than those in the goal orientation condition. Thus, hypothesis 2a was not supported, but 2b was.

The previous analyses were conducted using the average state goal orientation across the four sessions. To examine whether state goal orientation may have been diluted or changed over the course of time, these effects were also examined for the first set of state goal orientation measures (i.e., the averages for the state goal orientation items for the first week only). All of the conclusions derived from the four week averages remained the same. Specifically, protégé condition related to protégé state learning goal orientation ( $\beta = .24, p = .02$ , one-tailed), including protégé trait learning goal orientation as a covariate ( $\beta = .27, p < .01$ , one-tailed),  $F(2, 75) = 5.578$ . Protégé condition did not relate to protégé state avoid goal orientation ( $\beta = .08, p = .24$ , one-tailed), including protégé trait avoid goal orientation as a covariate ( $\beta = .05, p = .35$ , one-tailed),  $F(2, 75) = .424$ . Nor did condition relate when the covariate was removed, ( $\beta = .08, p = .26$ , one-tailed),  $F(1, 76) = .286$ . Mentor condition did not relate to mentor state learning goal orientation ( $\beta = -.16, p = .11$ , one-tailed), including mentor trait learning goal orientation as a covariate ( $\beta = .16, p = .11$ , one-tailed),  $F(2, 65) = 1.328$ . Nor did condition related when the trait covariate was removed, ( $\beta = -.12, p = .15$ , one-tailed),  $F(2, 66) = 1.031$ . Finally, mentor condition related to mentor state avoid ( $\beta = -.17, p < .05$ , one-tailed), including mentor trait avoid goal orientation as a covariate ( $\beta = .46, p < .01$ , one-tailed),  $F(2, 76) = 13.448$ ,

#### *Hypotheses 3 through 6: State Relations with Process Variables*

The third hypothesis proposed that (a) protégés' and (b) mentors' state learning goal orientation would be positively related to information/feedback seeking behaviors. Protégé state learning goal orientation did not relate to this behavior,  $r = .07, p = .27$  (one-tailed), nor did mentor state relate to mentors' information/feedback seeking behaviors,  $r = .01, p = .48$  (one-tailed). Thus, neither hypothesis 3a nor 3b were supported.

For the fourth hypothesis, it was proposed that (a) protégés' and (b) mentors' state avoid orientation would be negatively related to negative self-disclosure behaviors. Protégé state avoid did not relate to negative self-disclosure,  $r = -.02$ ,  $p = .43$  (one-tailed), nor did mentor state avoid goal orientation,  $r = -.08$ ,  $p = .26$  (one-tailed). Thus, neither hypothesis 4a nor 4b were supported.

Hypothesis 5 proposed that (a) protégé and (b) mentor state learning goal orientation would be positively related to dialogue interactivity. This relation did not hold for either protégés ( $r = -.12$ ,  $p = .17$ , one-tailed) or mentors ( $r = -.02$ ,  $p = .43$ , one-tailed). Hence, neither hypothesis 5a nor 5b were supported.

The sixth hypothesis proposed that (a) protégé and (b) mentor state avoid goal orientation would be negatively related to dialogue interactivity. Dialogue interactivity did not relate to protégé ( $r = -.14$ ,  $p = .12$ , one-tailed) nor mentor state avoid goal orientation ( $r = .03$ ,  $p = .40$ , one-tailed). Thus, neither hypothesis 6a nor 6b were supported.

#### *Hypothesis 7 and 8: Psychosocial and Career Support Functions*

Hypothesis 7 proposed that dialogue interactivity would be positively related to mentors' perceptions of (a) psychosocial and (b) career development functions provided. Dialogue interactivity did not statistically relate to mentor perceived psychosocial support functions given,  $r = .12$ ,  $p = .15$  (one-tailed), nor did it relate to mentor perceived career support functions,  $r = .02$ ,  $p = .44$  (one-tailed). Thus, neither hypothesis 7a nor 7b were supported.

Hypothesis 8 proposed that dialogue interactivity would be positively related to protégés' perceptions of (a) psychosocial and (b) career development functions provided. Dialogue interactivity positively related to protégé perceived psychosocial support functions,  $r = .24$ ,  $p = .02$  (one-tailed). The relationship of dialogue interactivity and career support was approaching

significance, but fell slightly short,  $r = .18$ ,  $p = .06$  (one-tailed). Hypothesis 8a was supported, whereas 8b was close to reaching statistical significance. Thus, this hypothesis was partially supported.

*Hypothesis 9 through 11: Interactions of Mentor and Protégé State*

Hypothesis 9 proposed that mentor state avoid goal orientation would interact with protégé state avoid goal orientation to predict protégé perceptions of psychosocial support. Specifically, it was proposed that mentor state avoid goal orientation would positively relate with psychosocial support for protégés high in avoid goal orientation but negatively relate with psychosocial support for protégés low in avoid goal orientation. This relationship was not supported, neither the interaction nor mentor or protégé avoid related to protégé perceptions of psychosocial support. Furthermore, because dialogue interactivity was related to protégé-perceived psychosocial support received, it was also included as a covariate. However, the relationship was still not significant. See Table 5.



Table 5: *Interaction of Protégé and Mentor State Avoid Goal Orientation Predicting Protégé Perceptions of Psychosocial Support Received.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Protégé State Avoid Goal Orientation	-0.48	0.61	-0.49	.22	-0.41	0.60	-0.42	.25
2. Mentor State Avoid Goal Orientation	-0.55	0.66	-0.55	.20	-0.52	0.64	-0.52	.21
3. Protégé x Mentor State Avoid Interaction	0.16	0.19	0.77	.21	0.15	0.19	0.71	.27
4. Dialogue Interactivity					0.01	0.01	0.23	.03
Adjusted $R^2$				.03				.01
Significance (two-tailed)				.86				.37

*Note:* Significance values are one-tailed except where otherwise indicated.

Hypothesis 10 proposed that mentor negative self-disclosure would interact with protégé state avoid goal orientation to predict protégé perceptions of psychosocial support received. Specifically, it was proposed that mentor negative self-disclosure behaviors would negatively relate to psychosocial support for protégés high in avoid goal orientation but positively relate with psychosocial support for protégés low in avoid goal orientation. Dialogue interactivity was related to protégé perceived psychosocial support functions, thus was included as a covariate. Mentor negative self-disclosure did interact with protégé state avoid in predicting protégé-reported psychosocial support (See Table 6). Furthermore, as demonstrated in Figure 6, the relationship was in the expected direction. Thus, this hypothesis was supported.

Table 6: *Interaction of Protégé State Avoid Goal Orientation with Mentor Negative Self-Disclosure Behaviors Predicting Protégé Perceptions of Psychosocial Support.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Protégé State Avoid Goal Orientation	0.30	0.20	0.31	.06	0.31	0.19	0.32	.06
2. Mentor Negative Self-Disclosure	0.01	0.01	0.92	.06	0.01	0.01	0.77	.10
3. Protégé State Avoid x Mentor Negative Self-Disclosure	0.00	0.00	-1.14	.03	0.00	0.00	-1.04	.04
4. Dialogue Interactivity					0.01	0.01	0.28	.01
Adjusted $R^2$				.04				.10
Significance (two-tailed)				.14				.02

*Note:* Significance values are one-tailed, except where otherwise indicated.

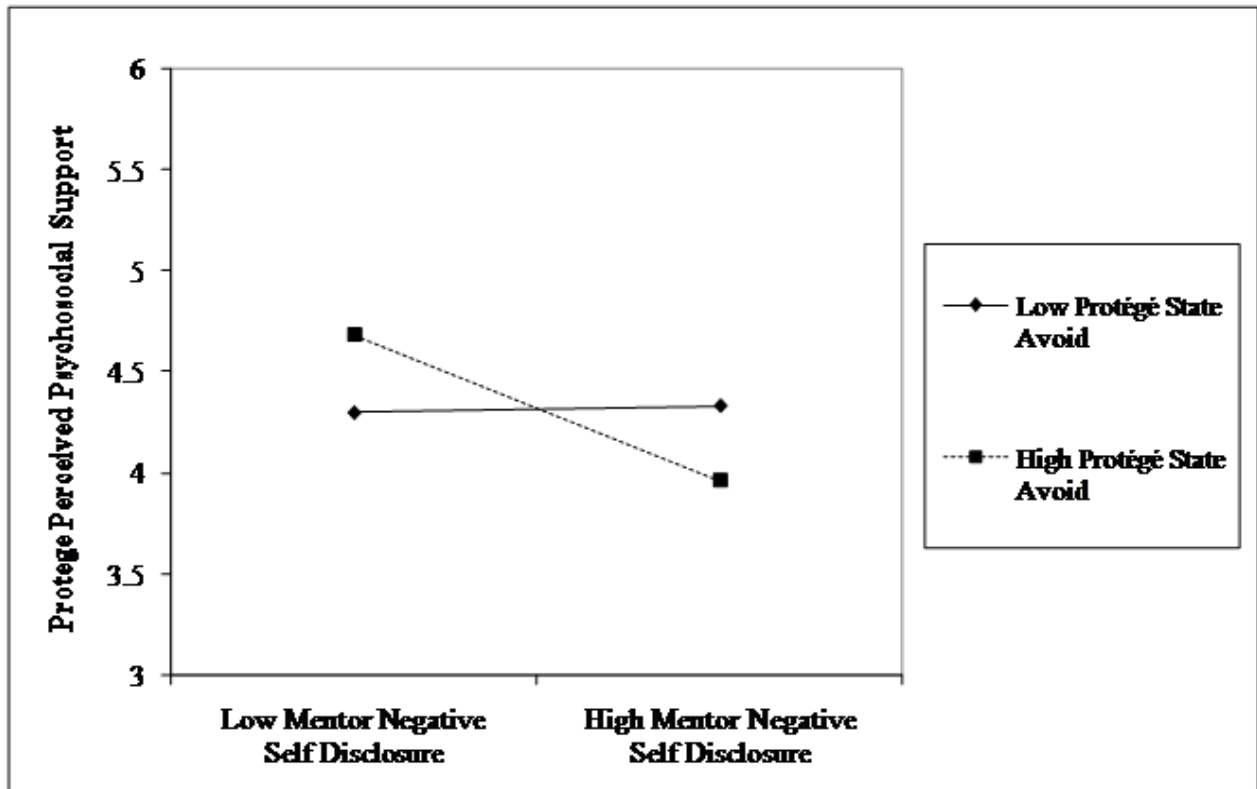


Figure 6: *Protégé State Avoid Goal Orientation and Mentor Negative Self-Disclosure Predicting Protégé-Perceived Psychosocial Support Functions.*

For hypothesis 11, it was proposed that protégé negative self-disclosure behaviors would interact with mentor state avoid goal orientation to predict mentors’ perceptions of psychosocial support given. Specifically, it was proposed that protégé negative self-disclosure behaviors would be negatively associated with mentor perceived psychosocial support for high state avoid goal orientation mentors and positively associated for low state avoid goal orientation mentors. This hypothesis was not supported (See Table 7).

Table 7: *Interaction of Mentor State Avoid Goal Orientation with Protégé Negative Self-Disclosure Behaviors Predicting Mentor Perceptions of Psychosocial Support.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Mentor State Avoid Goal Orientation	0.24	0.20	0.28	.11
2. Protégé Negative Self-Disclosure	0.01	0.01	0.38	.17
3. Mentor State Avoid x Protégé Negative Self-Disclosure	0.00	0.09	0.30	.23
Adjusted <i>R</i> <sup>2</sup>				.02
Significance (two-tailed)				.13

*Note:* Significance values are one-tailed, except when otherwise indicated.

Hypothesis 12 proposed that mentor information/feedback seeking behaviors would interact with protégé state learning goal orientation to predict protégé perceptions of career development support received. Specifically, it was proposed that mentor information/feedback seeking behaviors would positively relate to career development support for protégés high in learning goal orientation but negatively relate with career development support for protégés low in learning goal orientation. Mentor career information was examined as a covariate, but it did not contribute uniquely. As demonstrated in Table 8, the proposed interaction was not supported with or without the covariate. However, in these particular models, there was a main effect for protégé state learning goal orientation on protégé perceived career development support functions. Specifically, protégés higher on state learning goal orientation were more likely to report receiving greater career development support. Hypothesis 12 was not supported.

Table 8: *Interaction of Protégé State Learning Goal Orientation with Mentor Information/Feedback Seeking Behaviors Predicting Protégé Perceptions of Career Development Support.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Protégé State Learning Goal Orientation	0.44	0.20	0.49	.02
2. Mentor Information/Feedback Seeking	0.00	0.01	0.06	.45
3. Protégé State Learning x Mentor Information/Feedback Seeking	0.00	0.00	-0.11	.41
Adjusted $R^2$				.17
Significance (two-tailed)				<.01

*Note:* Significance values are one-tailed, except where otherwise indicated.

For the thirteenth hypothesis, it was proposed that protégé information/feedback seeking behaviors would interact with mentor state learning goal orientation to predict mentor perceptions of career support given. Specifically, protégé information/feedback seeking behaviors were expected to be negatively associated with mentor perceived career support for high state learning goal orientation mentor and positively associated for low state learning goal orientation mentors. As demonstrated in Table 9, this interaction was not supported, but coded career support was a unique predictor. Thus, this hypothesis was not supported.

Table 9: *Interaction of Mentor State Learning Goal Orientation with Protégé Information/Feedback Seeking Behaviors Predicting Mentor Perceptions of Career Development Support.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Mentor State Learning Goal Orientation	-							
	0.04	0.26	-0.03	.44	-0.08	0.24	-0.07	.37
2. Protégé Information/Feedback Seeking	-							
	0.01	0.03	-0.17	.36	-0.02	0.02	-0.30	.24
3. Mentor State Avoid x Protégé Information/Feedback Seeking								
	0.00	0.00	0.32	.25	0.00	0.00	0.35	.22
4. Coded Career Information								
					0.01	0.00	0.39	.00
Adjusted $R^2$								.11
Significance (two-tailed)								.03

*Note:* Significance values are one-tailed, except where otherwise indicated.

*Hypothesis 14: Protégé Post-Mentoring Stress*

Hypothesis 14 proposed that mentor state avoid goal orientation would interact with protégé avoid goal orientation to predict post-mentoring academic stress for protégés.

Specifically, it was proposed that mentor state avoid goal orientation would be positively associated with stress reduction for protégés high in avoid goal orientation but negatively associated with stress reduction for protégés low in avoid goal orientation. This hypothesis was not supported (See Table 10).

Table 10: *Interaction of Mentor and Protégé State Avoid Goal Orientation and Post-mentoring Protégé Stress*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Pre-Program Stress	0.82	0.12	0.65	.00
2. Protégé State Avoid Goal Orientation	-0.63	0.78	-0.38	.21
3. Mentor State Avoid Goal Orientation	-0.95	0.84	-0.55	.13
4. Protégé State Avoid x Mentor State Avoid	0.27	0.24	0.75	.13
Adjusted $R^2$				.44
Significance (two-tailed)				< .01

*Note:* Significance values are one-tailed, except where otherwise indicated.

*Hypothesis 15: Mediation*

Hypothesis 15 proposed that protégé-reported psychosocial support would mediate the interaction of mentor and protégé state avoid goal orientation in predicting academic stress reduction. According to Barron and Kenny (1986), the interaction of mentor and protégé state avoid goal orientation would have to have been related to protégé stress reduction. However, as demonstrated in the fourteenth hypothesis this was not supported. The relation of protégé-reported psychosocial support and protégé stress reduction was also examined, which was not supported either with or without mentor supportive statements included in the model (See Table 11). Thus, this hypothesis was not supported.

Table 11: *Protégé-Reported Psychosocial Support and Post-Program Protégé Stress.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>P</i>
1. Pre-Program Stress	0.84	0.11	0.67	.00
2. Psychosocial Support Received	0.11	0.15	0.07	.23
Adjusted $R^2$				.44
Significance (two-tailed)				< .01

*Note:* Significance values are one-tailed, except where otherwise indicated.

*Hypothesis 16: Protégé Post-Program Self-Efficacy*

Hypothesis 16 proposed that protégé state learning goal orientation would be positively related with post-mentoring protégé academic self-efficacy. Including pre-program self-efficacy as a covariate to control for pre-program levels, protégé state learning goal orientation was related to post-program self-efficacy ( $p < .05$ , one-tailed). See Table 12. Thus, this hypothesis was supported. Additionally, I examined whether mentor and protégé state learning goal orientation interacted to predict post-program self-efficacy. As shown in Table 13, and depicted in Figure 7, protégé state learning goal orientation was positively related to self-efficacy only for those with mentors in a low state of learning goal orientation.

Table 12: *Protégé State Learning Goal Orientation and Post-Program Protégé Self-Efficacy.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Pre-Program Self-Efficacy	0.57	0.10	0.58	<.01
2. Protégé State Learning Goal Orientation	0.14	0.08	0.17	<.05
Adjusted $R^2$				.40
Significance (two-tailed)				< .01

*Note:* Significance values are one-tailed, except where otherwise indicated.



Table 13: *Protégé and Mentor State Learning Goal Orientation Predicting Protégé Post-Program Self-Efficacy.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Pre-Program Self-Efficacy	0.58	0.09	0.59	.00
2. Protégé State Learning Goal Orientation	1.32	0.54	1.65	.02
3. Mentor State Learning Goal Orientation	1.06	0.48	0.97	.03
4. Protégé x Mentor State Learning Goal Orientation	-0.23	0.10	-1.68	.03
Adjusted $R^2$				.41
Significance				< .01

*Note:* Significance values are two-tailed.

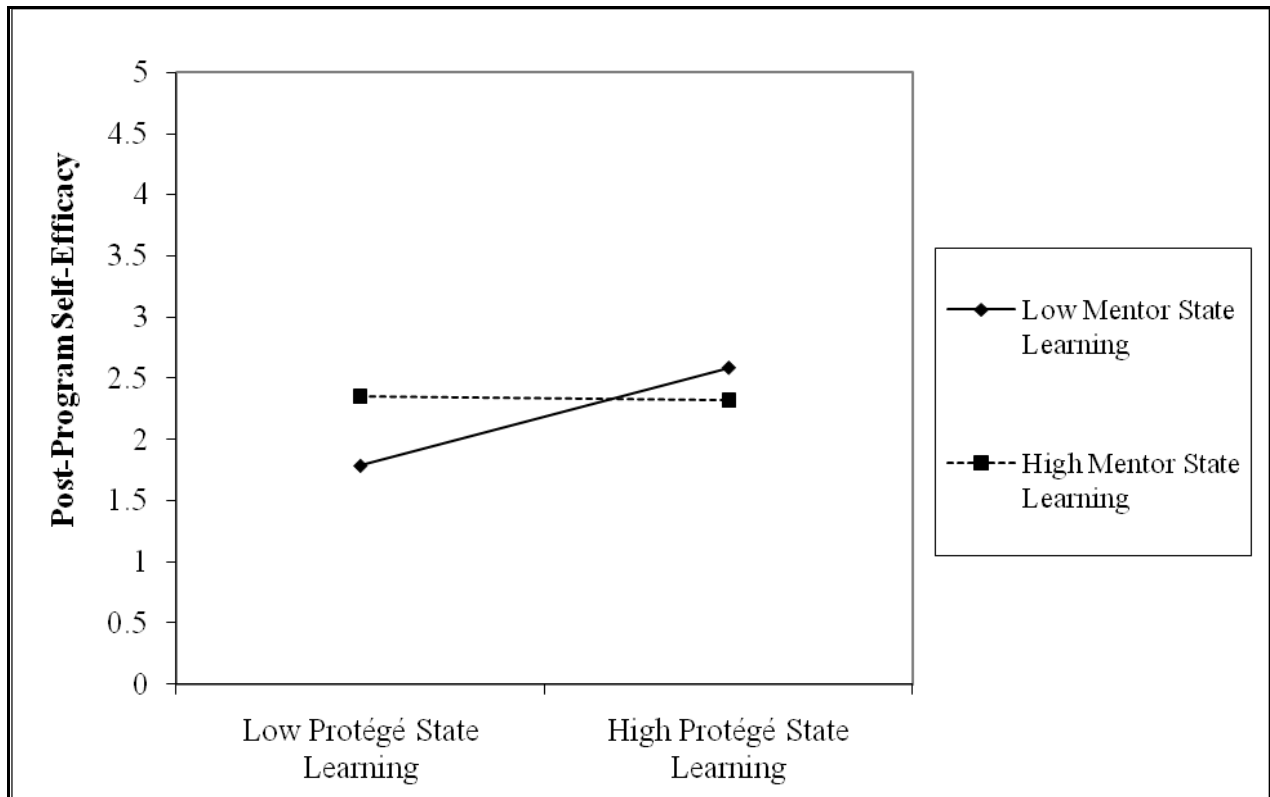


Figure 7: Interaction of Mentor and Protégé State Learning Goal Orientation Predicting Protégé Post-Program Self-Efficacy.

*Hypothesis 17: Dialogue Interactivity*

And, finally, the seventeenth hypothesis proposed that dialogue interactivity would partially mediate the relationship between protégé state learning goal orientation and post-program protégé self-efficacy. As demonstrated by the fifth hypothesis, protégé state learning goal orientation did not relate to dialogue interactivity, thus, mediation was not present. The relation between dialogue interactivity and post program self-efficacy was also examined, and no relation was present with or without mentor career information included in the model (See Table 14). The final hypothesis was not supported.

Table 14: *Dialogue Interactivity and Post-Program Protégé Self-Efficacy.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
1. Pre-Program Self-Efficacy	0.59	0.10	0.60	.00	0.61	0.10	0.62	.00
2. Dialogue Interactivity	0.00	0.01	-0.07	.24	-0.01	0.01	-0.09	.18
3. Mentor Career Information					0.00	0.00	0.08	.22
Adjusted $R^2$				.37				.37
Significance (two-tailed)				< .01				< .01

*Note:* Significance values are one-tailed, except where otherwise indicated.

## Supplementary Analyses

Several additional analyses were conducted to obtain a better understanding of the results from this study. These supplementary analyses involved the proposed interactions based on the notion that individuals would react differently (perceptions of mentoring functions and outcomes) to the coded behavior of their partners (mentor or protégé) depending on their goal orientation states. In only one case, such a relationship was supported (i.e., interaction of protégé state avoid goal orientation and mentor self-disclosure). Given that my state goal orientation measure was new and contained only two items per subscale per week, it is possible that the unreliability of these measures may have limited my ability to adequately test these interactions. Training was intended to manipulate goal orientation states. Given the possibility that my state goal orientation measures did not adequately capture variability in the constructs of interest, I replaced state goal orientation (learning or avoid) with training condition (mentor or protégé) and tested for interactions with the coded variables (see Figure 8). So, for example, instead of testing the interaction of mentor state learning goal orientation and protégé feedback seeking, I tested the interaction of mentor training condition and protégé feedback seeking; with the rationale being that training condition may be a more reliable indicator of goal orientation state than my goal orientation state measure. Alternatively, training condition may have simply manipulated expectations for goal oriented behavior and not state goal orientation itself. In this case, one might expect to see the same type of interaction.

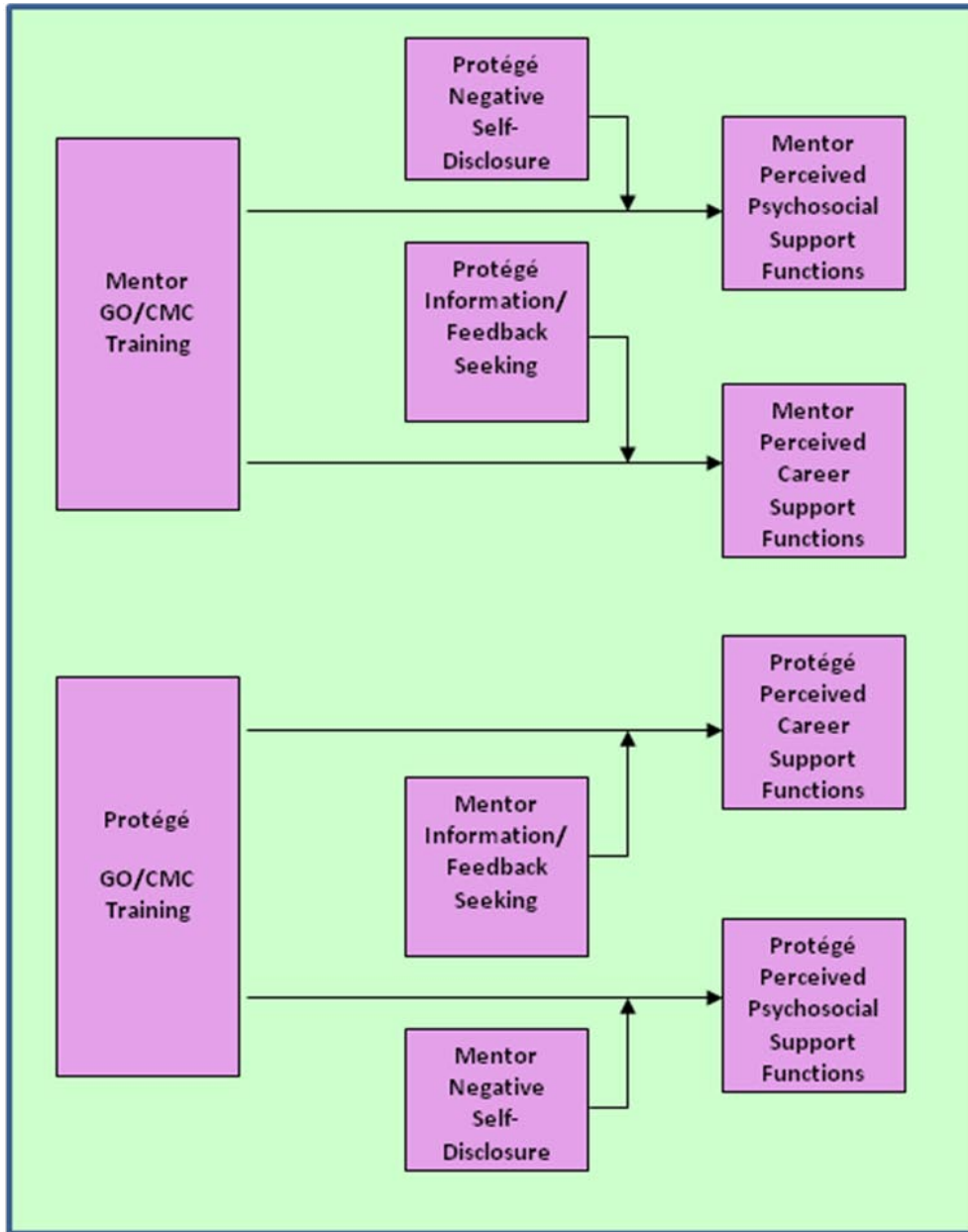


Figure 8: *Training Type and Partner Behavior Predicting Perceptions.*

*Predicting mentor perceptions.* First, multiple regression equations were computed to examine the interaction of mentor condition and protégé self-disclosure on mentor-perceived psychosocial support and the interaction of mentor condition and protégé feedback-seeking on

mentor-perceived career support. As shown in Table 15, the latter interaction was significant, and as illustrated Figure 9 the pattern was consistent with the notion that those receiving goal orientation training would react positively when their partner demonstrated appropriate goal oriented behaviors, whereas those who did not receive goal orientation training responded negatively.

Table 15: *Interaction of Mentor Training Type and Protégé Information/Feedback Seeking Predicting Mentor-Perceived Career Support Given.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>P</i>
1. Mentor Condition	-0.81	0.55	-0.41	.07	-0.88	0.54	-0.45	.05
2. Protégé Information/ Feedback Seeking	-0.01	0.01	-0.16	.17	-0.01	0.01	-0.22	.09
Mentor Condition X Protégé Feedback/Information Seeking	0.02	0.01	0.54	.03	0.02	0.01	0.53	.03
4. Mentor Career Information					0.00	0.00	0.28	.01
Adjusted $R^2$				.01				.07
Significance (two-tailed)				.27				.06

*Note:* Significance values are one-tailed, except where otherwise indicated.

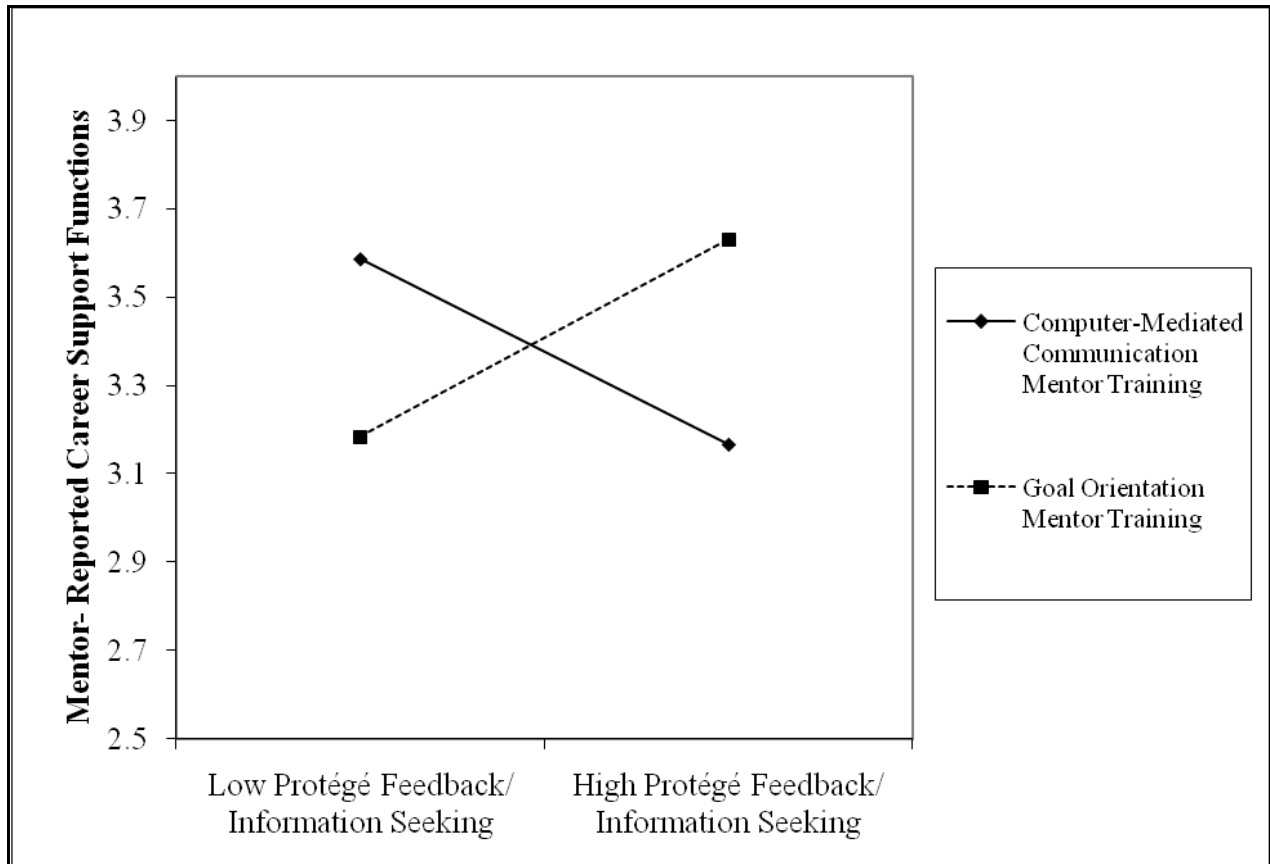


Figure 9: *Interaction of Protégé Information/Feedback Seeking and Mentor Condition Predicting Mentor Perceived Career Support Provided.*

*Predicting protégé perceptions and outcomes.* Next, I computed the same multiple regression equations only this time predicting protégé perceptions of psychosocial and career support. None of these equations produced the expected interactions. Finally, I examined whether protégé condition interacted with mentor goal oriented behavior to predict my outcomes of interest; namely stress and self-efficacy. Specifically, I regressed post-program stress onto pre-program stress, protégé condition, mentor self-disclosure, and the interaction of protégé condition and mentor self-disclosure. This equation did not produce a significant interaction term. However, when the effect of training was examined by itself, it was found that protégés in

the goal orientation condition were more likely to have lower stress than those protégés in the computer-mediated communication training condition. See Table 16.

Table 16: *Protégé Training Condition Predicting Protégé Post-Program Stress*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>P</i>
1. Pre-Program Stress	0.87	0.11	0.69	.00
2. Protégé Training	-			
	0.56	0.23	-0.21	.02
Adjusted $R^2$				.48
Significance				< .01

*Note:* Significance values are two-tailed.

When I computed a parallel analysis predicting post-program self-efficacy I found that protégé condition did interact with mentor feedback seeking to predict post-program self-efficacy (See Table 17). The relationship is demonstrated in Figure 10. It appeared to be detrimental for protégés in the computer-mediation communication training if a mentor was high in information/feedback seeking, whereas if the protégé was in the goal orientation training the mentors' information/feedback seeking behaviors did not matter.



Table 17: *Interaction of Protégé Training Type and Mentor Information/Feedback Seeking Predicting Protégé Post-Program Self-Efficacy.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>P</i>
1. Pre-Program Self-Efficacy	0.56	0.10	0.58	<.01	0.59	0.10	0.60	<.01
2. Protégé Training	-0.53	0.37	-0.29	.16	-0.53	0.37	-0.30	.16
3. Mentor Information/ Feedback Seeking	-0.01	0.00	-0.27	.06	-0.01	0.00	-0.28	.05
4. Protégé Condition x Mentor Information/Feedback Seeking	0.01	0.00	0.42	.07	0.01	0.00	0.42	.07
5. Mentor Career Information					0.00	0.00	0.08	.44
Adjusted $R^2$				0.39				.38
Significance				< .01				< .01

*Note:* Significance values are two-tailed.

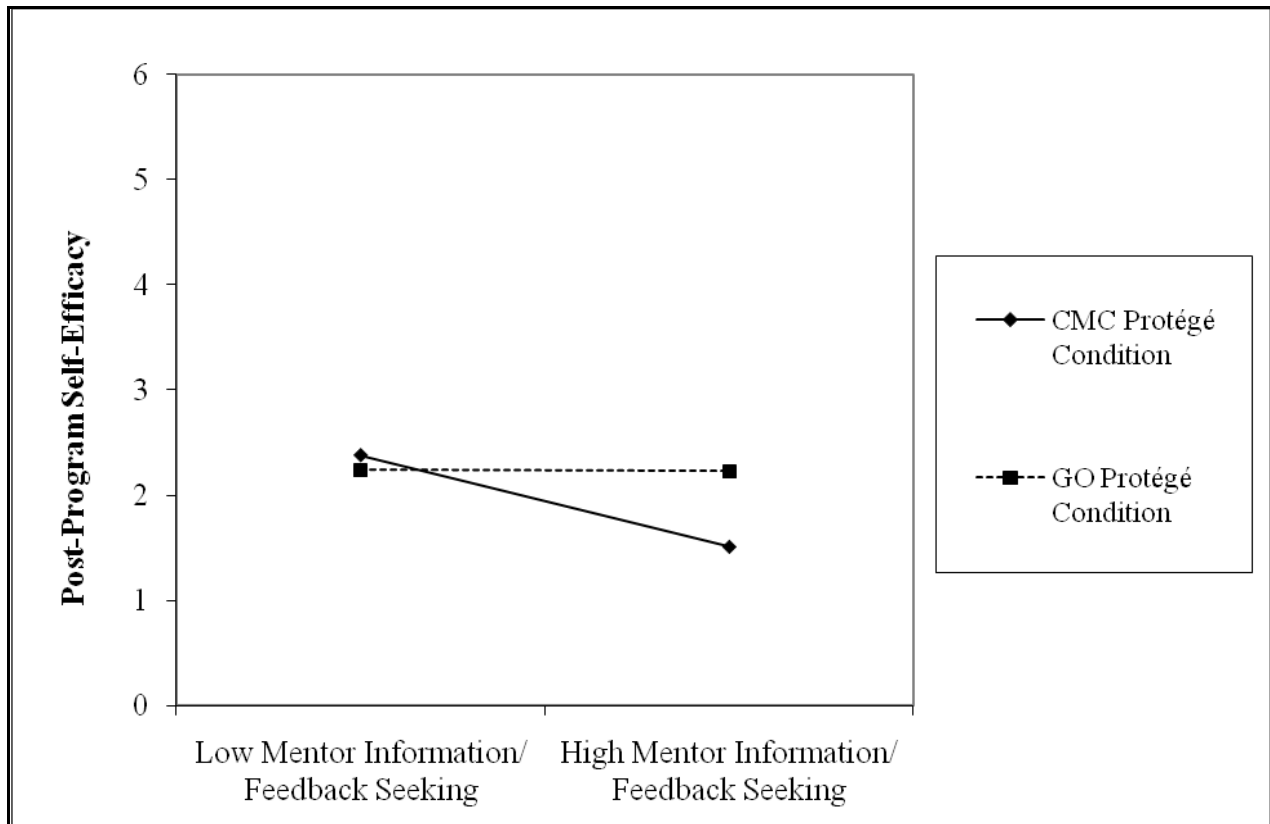


Figure 10: Interaction of Protégé Training Type and Mentor Information/Feedback Seeking Predicting Protégé Post-Program Self-Efficacy.

*Predicting mentor and protégé behaviors.* A final set of analyses were performed to determine whether training type determined the degree to which one partner's use of goal-oriented behaviors influenced the other's use of those same behaviors. For example, protégé self-disclosure behavior was regressed on protégé condition, mentor self-disclosure, and their interaction. Results indicated that the interaction term was significant (see Table 18). As demonstrated in Figure 11, protégés use of self-disclosure was more positively related to their mentor's use of self-disclosure behaviors if the protégé had received goal orientation training. A

similar equation was conducted to examine protégé information/feedback-seeking behavior, however this equation was not significant.

Table 18: *Interaction of Mentor Negative Self-Disclosure and Protégé Condition Predicting Protégé Negative Self-Disclosure.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>P</i>
1. Protégé Training	-22.67	18.60	-.24	.23
2. Mentor Negative Self-Disclosure	.04	.09	.06	.67
3. Protégé Training x Mentor Negative Self-Disclosure	.29	.14	.45	.04
Adjusted $R^2$				.09
Significance				.02

Note: Significance values are two-tailed.

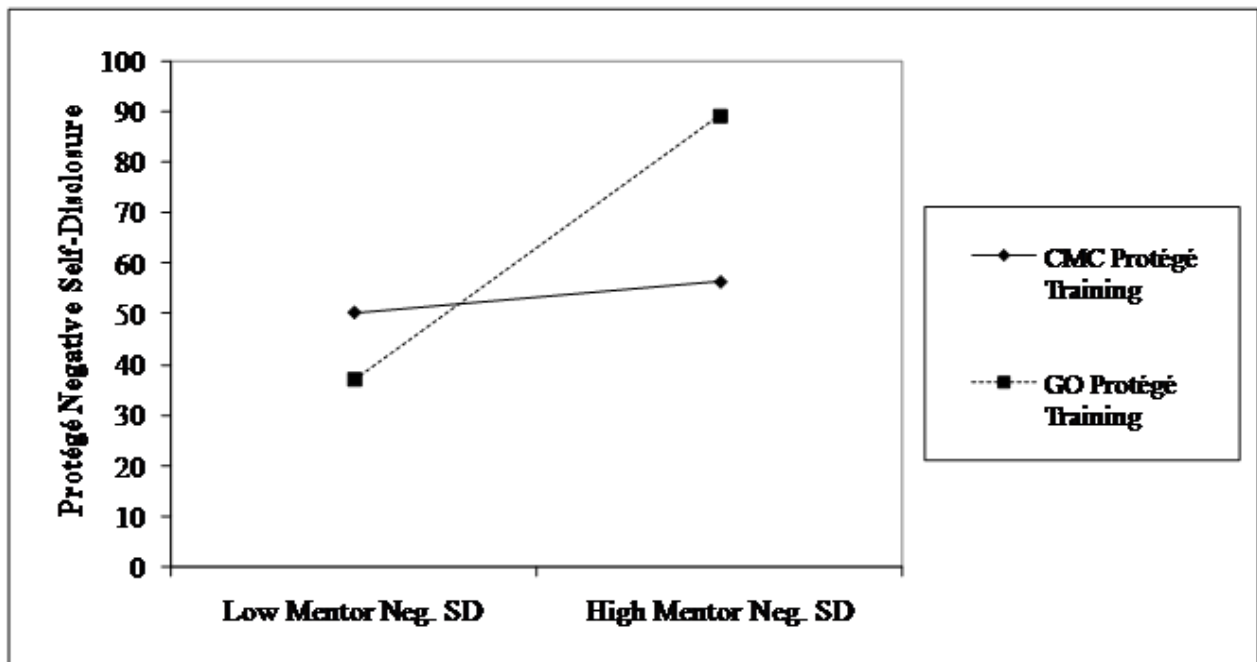


Figure 11: *Interaction of Protégé Training Condition and Mentor Negative Self-Disclosure Predicting Protégé Negative Self-Disclosure.*

Table 19: *Summary of Results of Study Hypotheses.*

Hypothesis	Result
Hypothesis 1. (a) Protégés and (b) mentors who receive goal orientation training will report higher states of learning goal orientation than those who do not.	Hypothesis 1a supported, 1b not supported.
Hypothesis 2. (a) Protégés and (b) mentors who receive goal orientation training will report lower states of avoid goal orientation than those who do not.	Hypothesis 2a was not supported, but 2b was supported.
Hypothesis 3. (a) Protégés' and (b) mentors' state learning goal orientation will be positively related to information/feedback seeking behaviors.	Neither hypothesis 3a nor 3b were supported.
Hypothesis 4. (a) Protégés' and (b) mentors' state avoid goal orientation will be negatively related to negative self-disclosure behaviors.	Neither hypothesis 4a nor 4b were supported.
Hypothesis 5. (a) Protégé and (b) mentor state learning goal orientation will be positively related to dialogue interactivity.	Neither hypothesis 5a nor 5b were supported.
Hypothesis 6. (a) Protégé and (b) mentor state avoid goal orientation will be negatively related to dialogue interactivity.	Neither hypothesis 6a nor 6b were supported.
Hypothesis 7. Dialogue interactivity will be positively related to mentors' perceptions of (a) psychosocial and (b) career development functions provided.	Neither hypothesis 7a nor 7b were supported.
Hypothesis 8. Dialogue interactivity will be positively related to protégés' perceptions of (a) psychosocial and (b) career development functions received.	Hypothesis 8a was supported, and 8b almost reached statistical significance.

Hypothesis	Result
<p>Hypothesis 9. Mentor state avoid goal orientation will interact with protégé state avoid goal orientation to predict protégé perceptions of psychosocial support. Specifically, mentor state avoid goal orientation will be positively associated with psychosocial support for protégés high in avoid goal orientation but negatively associated with psychosocial support for protégés low in avoid goal orientation.</p>	<p>Hypothesis 9 was not supported.</p>
<p>Hypothesis 10. Mentor negative self-disclosure behaviors will interact with protégé state avoid goal orientation to predict protégés' perceptions of psychosocial support received. Specifically, mentor negative self-disclosure behaviors will be negatively associated with protégé perceived psychosocial support for high state avoid goal orientation protégés and positively associated for low state avoid goal orientation protégés.</p>	<p>Hypothesis 10 was supported.</p>
<p>Hypothesis 11. Protégé negative self-disclosure behaviors will interact with mentor state avoid goal orientation to predict mentors' perceptions of psychosocial support given. Specifically, protégé negative self-disclosure behaviors will be negatively associated with mentor perceived psychosocial support for high state avoid goal orientation mentors and positively associated for low state avoid goal orientation mentors.</p>	<p>Hypothesis 11 was not supported.</p>
<p>Hypothesis 12. Mentor information/feedback seeking behaviors will interact with protégé state learning goal orientation to predict protégés' perceptions of career support received. Specifically, mentor information/feedback seeking behaviors will be positively associated with protégé perceived career support for high learning goal orientation protégés and negatively associated for low state learning goal orientation protégés.</p>	<p>Hypothesis 12 was not supported.</p>

Hypothesis	Result
<p>Hypothesis 13. Protégé information/feedback seeking behaviors will interact with mentor state learning goal orientation to predict mentor perceptions of career support given. Specifically, protégé information/feedback seeking behaviors will be positively associated with mentor perceived career support for high state learning goal orientation mentor and negatively associated for low state learning goal orientation mentors.</p>	<p>Hypothesis 13 was not supported.</p> <p>However, mentors perceived more career support functions in the presence of protégé information/feedback seeking behaviors when the mentors were in the goal orientation training condition.</p>
<p>Hypothesis 14. Mentor state avoid goal orientation will interact with protégé avoid goal orientation to predict protégé post-program stress. Specifically, mentor state avoid goal orientation will be negatively associated with post-program stress for protégés high in avoid goal orientation but positively associated with post-program stress for protégés low in state avoid goal orientation.</p>	<p>Hypothesis 14 was not supported.</p>
<p>Hypothesis 15. Protégé-reported psychosocial support will mediate the interaction of mentor and protégé state avoid goal orientation in predicting stress reduction.</p>	<p>Hypothesis 15 was not supported.</p>
<p>Hypothesis 16. Protégé state learning goal orientation will be positively associated with protégé post-program self-efficacy.</p>	<p>Hypothesis 16 was supported.</p> <p>Furthermore, the interaction of mentor and protégé state learning goal orientation suggested a positive effect of protégé state learning goal orientation only when mentor state learning goal orientation was low.</p>
<p>Hypothesis 17. Dialogue interactivity will partially mediate the relationship between protégé state learning goal orientation and protégé post-program self-efficacy.</p>	<p>Hypothesis 17 was not supported.</p>

## CHAPTER FIVE: DISCUSSION

### Summary of Results

The current study was designed to examine the effects of training designed to elicit high states of learning goal orientation and low states of avoid orientation on mentoring relationship processes and outcomes. Training was implemented for both mentors and protégés, and the effects for training were examined at both the level of main effects and also the interaction of mentor and protégé behaviors and states in regards to mentoring relationship outcomes. The results, inferences, and their implications will be summarized in the subsequent sections.

#### *Training Designed to Elicit States of Goal Orientation*

First, it was proposed that by implementing a training intervention, that states of goal orientation could be elicited for mentoring relationship participants. The training was effective for eliciting states of learning goal orientation for protégés, and lowering states of avoid goal orientation for mentors. It is possible that the state measures may not have been sensitive to detect differences in state for the unsupported findings, given that these scales consisted of solely two items per construct (collected on four occasions).

Upon closer examination, mentor learning goal orientation may have suffered from restriction in range. Mentors on average were extremely high in the construct ( $M = 5.11$ ,  $SD = .82$ , with a 1 to 6 response format), which may have reduced the probability to find an effect. Unexpectedly, there was a positive relationship between states of learning and avoid (for both mentors and protégés). Thus, it is likely that mentors and protégés who were extremely ‘motivated’ while reading these questions positively endorsed all the state questions. In other

words, they wish to both help with protégés maximizing their potential and also avoiding unpleasant situations.

Alternatively, it may also be plausible that the avoid and learning components of the goal orientation training may have been differentially salient for mentors and protégés, thus eliciting the respective states. For example, the training may have caused mentors to feel that their role was to be reactive, whereas protégés may have believed they had to be proactive. Mentors and protégés may have walked away from the training perceiving that since the goal of the mentoring relationship was to help the protégé, they may have believed that the protégé should be the dominant force in the course of the relationship.

Mentors may have believed that their major role was to be as open as possible and provide protégés with their own personal examples and ideas as desired by the protégé (thus, they may have perceived that they needed to be low on state avoid goal orientation). Examining the two questions assessing learning goal orientation – “What my protégé needs most from me today is knowledge that will help him/her to reach his/her fullest potential” and “I hope to learn something about myself though the chat I have with my protégé today” – goal orientation trained mentors may not have perceived these as initially intended. Specifically, they may have read these and assumed that a) I need to help my protégé with whatever he/she wants to talk about, whether it be reaching his fullest potential or just surviving the next exam, and b) I’m really concerned about my protégé, but if I learn something about myself, that is great too.

Similarly, protégés in the goal orientation training may have believed that their predominant role was to obtain as much information and take a lead role in the guiding the mentoring relationship (thus, may not focused as much on the avoid aspects). Examining the two questions assessing protégé state avoid – “Today, I am most interested in talking about how I can



avoid situations where I may fail” and “I am not in the mood to talk about my personal challenges today” – protégés in the goal orientation condition may again not have interpreted these as intended. For example, in regards to the first question, protégés may honestly be very concerned in general about not failing and may have actually felt that by disclosing their fears of potential failure with their mentor that they would learn a way to resolve these potential problems (the mere disclosure would be indicative of a learning goal orientation). Moreover, for the second question, it is plausible that protégés may have had a low state of avoid in some instances – but had something specific they wanted to discuss that they did not perceive to be a ‘personal challenge’.

#### *States of Goal Orientation and Mentoring Relationship Processes*

It was proposed that states of goal orientation would be related to various mentoring relationship processes. Specifically, it was proposed that high states of learning goal orientation would be related to information/feedback seeking and dialogue interactivity whereas low states of avoid orientation would be related to dialogue interactivity and negative self-disclosure. However, this was not supported. The agreement for the raters for the coded goal oriented processes were not as high as potentially desired, which may have diluted the ability to detect these relationships. However, upon further analysis, it appears that part of the reason that some of these analyses were not supported was due to the fact that individuals’ use of these behaviors was affected by their partners’ use of the behaviors. For example, there was a negative relationship between mentor and protégé information feedback seeking behaviors. Furthermore, there was a positive relationship between mentor and protégé negative self-disclosure. And, there was a positive relationship with mentor information/feedback seeking and protégé negative self-disclosure. A supplementary analysis found that protégés in the goal orientation training

condition were more likely to negatively self-disclose when their mentor negatively self-disclosed relative to protégés who were in the computer-mediated communication training condition. Moreover, protégés in general were less likely to negatively self-disclose when their mentor was low in the behavior. In short, it appears that the impact of training on goal oriented behavior was dependent of the behavior of one's partner. However, training interacted with mentor goal oriented behaviors to determine whether protégés would engage in self-disclosure. It appears that partners were most affected by one another's goal oriented behavior.

#### *States of Goal Orientation, Mentoring Relationship Processes, and Outcomes*

Dialogue interactivity was found to relate to protégés perceptions of psychosocial functions received. Specifically, protégés in dyads that were more interactive in their conversations were more likely to perceive that they had received psychosocial support functions from their mentors. Protégés may perceive more interactive mentors as being more 'in-tune' with their needs. As argued by several individuals (Bonnett, Wildemuth, & Sonnenwald, 2006; Smith-Jentsch, Scielzo, Yarbrough, & Rosopa, 2008), dialogue interactivity represents the extent to which mentors and protégés are 'communicating' with one another – versus, for example, a mentor continually 'lecturing' to a protégé, or possibly a mentor providing ad nauseam protégé-perceived irrelevant personal examples.

It was also found that mentor negative self-disclosure behaviors interacted with protégé state avoid goal orientation in predicting protégés' perception of psychosocial support functions provided. Specifically, when a protégé was low in state avoid goal orientation, it did not really matter when a mentor negatively self-disclosed. However, when a protégé was high in state avoid goal orientation and a mentor undertook negative self-disclosure behaviors, this was detrimental to protégés' perceptions of psychosocial support functions received. Thus,

effectively training mentors to negatively self-disclose may actually be detrimental to mentoring relationships for protégés high in state avoid goal orientation, and be relatively ineffective for those protégés low in avoid goal orientation. This finding is consistent with prior research demonstrating that protégés high on avoid goal orientation had higher stress at the end of a formal mentoring program if their mentor was low on avoid goal orientation than if their mentor was also high on this construct (Singleton, Smith-Jentsch, Feldman, 2007).

In regards to mentoring relationship outcomes, a supplementary analysis found that training condition had a main effect on protégé post-program stress levels. Specifically, it was found that protégés that participated in the goal orientation training had lower post-program stress than protégés in the computer-mediated communication training condition. Thus, by providing protégés with such a training, protégés may be more likely to be receptive in their mentoring relationships to the information that their mentor offers them, and in turn perceive that their stress levels have been lowered.

Furthermore, several hypotheses proposed that states would interact with mentoring relationship behaviors in predicting outcomes. This notion was supported in the case described above (protégé state avoid interacted with mentor self-disclosure), but not in the other cases. As discussed in the previous sections, the state items may not have been sensitive enough to capture all of the differences in state actually realized from the training. In order to overcome this limitation, training type was examined in place of the state measures for these interactions, and it was found that mentor training type interacted with protégé information/feedback seeking behaviors to predict mentors' perceptions of career support functions provided. Specifically, if a mentor was in the computer-mediated communication training, then the more a protégé engaged in feedback seeking the less the mentor felt they had provided career support. However, if the

mentor was in the goal orientation training and their protégé undertook information/feedback seeking behaviors the mentor perceived that he/she had given more career support to his her protégé. This suggests that the goal orientation training may have led mentors to expect that if the relationship was going well, their protégé would be actively involved in helping them to tailor their career support by asking questions and requesting feedback. Thus, if this did not happen, mentors who received the goal orientation training perceived that they had not been as helpful in providing career support. Conversely, mentors in the computer-mediated communication condition were not given the expectation that their protégés should actively seek feedback and information from them. These mentors appear to have interpreted protégés' feedback seeking to mean that they were not doing a good job of providing career support. A similar interaction was found with respect to protégé training type and mentor feedback seeking. Specifically, protégés who received computer-mediated communication training demonstrated lower post-program self-efficacy the more their mentors engaged in feedback-seeking behaviors.

Finally, consistent with the notion that my preparatory training affected participants' expectations and that those expectations influence the manner in which they perceived their relationships, mentors and protégés in the same training condition reported more similar perceptions of the mentoring functions that had been provided/received than did dyads who received different preparatory training types. Thus, it appears that these initial expectations held throughout the mentoring relationship and subsequently affected perceptions of the behaviors in the relationships. When similar expectations were held, similar perceptions regarding what occurred during the relationship also resulted.

## Theoretical Implications

The results of the current study expand on our understanding and provide insight into several areas of research. Specifically, although the majority of the findings from this study are applicable to mentoring in general, some of the findings are also of value to the research being conducted examining state and dispositional goal orientation, and also the broad area of research being undertaken examining training and its effects on post-training performance/perceptions. The potential theoretical implications for each of these areas will be discussed in turn.

### *Goal Orientation*

Several recent studies have demonstrated that states of goal orientation can be elicited under different circumstances and in regards to various environmental cues (e.g., Bell & Kozlowski, 2008; Kozlowski and Bell, 2006; Stevens & Gist, 1997). In further support of these findings, this study demonstrated that desired states of goal orientation can be elicited given a relatively-short training intervention designed for this purpose, specifically for the purposes of preparing individuals to be successful in their mentoring relationships. Furthermore, states of goal orientation remained relatively stable over the course of the four-week program, demonstrating that training can be powerful enough to overcome many of the other cues that might otherwise have affected state in this time period.

However, although states of goal orientation are manipulable, modification of states of goal orientation may not be salient enough in and of itself to induce desired behavioral change. Dependent on the context and desired behaviors, additional goal orientation cues (e.g., explicit consequences for goal-oriented behaviors) may need to be present in order to for state manipulations to have the desired effects.

The results regarding perceptions of behavior and expectations from the current study are consistent with other goal orientation studies. For example, one past study found that participants perform better when training features were consistent. Specifically, Kozlowski and Bell (2006) found that participants performed better when goal content and goal frame were both learning goal oriented relative to when content and goal were different. Thus, by providing consistent expectations to participants, participants were more likely to perform better. Another study found that individuals were more likely to prefer to receive performance feedback that was consistent with their goal orientation disposition. Specifically, individuals high in learning goal orientation preferred to receive process-related feedback more so than those lower in learning goal orientation (Li, Solmon, Lee, Purvis, & Chu, 2007). In this case, participants preferred behaviors that were consistent with their expectation. In the current study, training appeared to set a frame for participants, eliciting states of goal orientation that subsequently affected how they reacted to their partner's behaviors. Specifically, it appears that participants responded more favorable to their partners' behaviors when they believed that was how their partner was supposed to behave.

### *Training*

The potential benefits of training in preparation for mentoring relationships is readily advocated by many (e.g., Johnson, 2002; Kasprisin, Single, Single, Ferrier, & Muller, 2008; Tang & Choi, 2005), but little research has been done in this area demonstrating the efficacy of implementing such preparation. Furthermore, mentoring itself is generally considered a form of training for protégés (e.g., Allen, Eby, & Lentz, 2006; Ragins & Cotton, 1999), in which they are socialized and receive necessary developmental information (whether it be an academic program or a job-specific mentoring program). It was hoped that by providing a preparatory training to

both mentors and protégés, that mentors and protégés would undertake desired behaviors and subsequently that protégés would receive the maximum benefits attainable from the mentors' training.

It appears that the effects of the current training were more at an attitudinal level than at a behavioral level. It is likely that most short term mentoring training programs are similar in nature, and also likely have similar effects. Specifically, the behavior of the partner may be more of a determinant of an individual's own behaviors. However, given the results in this study, it is likely that expectations are set by training, and if the partner does not meet those expectations, the individual may be less likely to perceive that mentoring relationship outcomes were obtained. Thus, the effects of training may actually be detrimental to some mentoring relationship outcomes if one mentoring partner and not the other is trained.

*Setting an appropriate 'frame'.* It is likely that many of the findings obtained in this study are attributable to expectations regarding what was supposed to occur during the mentoring relationship were affected. It is likely that training may set a 'frame' (e.g., Kozlowski, & Bell, 2006) for individuals, or in other words, may prime the individual to think differently when in the mentoring relationship. Subsequently, individuals reference this frame whenever in a context consistent with that which the frame was learned (e.g., participating in the mentoring relationship). In turn, individuals' expectations for their partners are also changed. However, if the partner entered with a different frame, and behaved differently, it appears that this caused individuals to behave differently in response to their partners' behaviors.

## *Mentoring*

Although each of the theoretical implications discussed above are also relevant to mentoring research in general, there are several other theoretical implications specific to the mentoring literature. These implications will be discussed in the subsequent sections.

*Dialogue interactivity.* This study provides additional support for examining dialogue interactivity as a predictor of mentoring relationship outcomes in electronic-mentoring relationships. Specifically, Bonnett and colleagues (2006) found that mentors and protégés that rated their relationship as effective were more interactive. Moreover, Smith-Jentsch and colleagues (2008) found that dialogue interactivity positively related to protégé post-program self-efficacy. Dialogue interactivity represents not only the behavior of the mentor or the protégé alone, but represents the synergy of the mentor and protégé communicating together. The interactivity of mentors and protégés in the relationship may be an indicator to the extent to which the protégé is taking an active role in the learning process, and indirectly represent the extent to which a protégé is presenting the mentor with his/her concerns (and receiving responses to address these needs) (e.g., Smith-Jentsch, et al., 2008). Thus, given the findings of the current study in conjunction with the aforementioned studies, dialogue interactivity predicts numerous mentoring relationship outcomes, and the specific manner through which this occurs should be further investigated in the future. Specifically, different methods of assessing dialogue interactivity and different methods of indexing it should be evaluated in the future so that a better understanding of the predictive ability of dialogue interactivity can be obtained.

*Reactivity of behaviors.* One of the most important contributions of this study to mentoring research, was the finding regarding reactivity of behavior. Specifically, I found that the goal oriented behaviors of mentors and protégés were more related when the protégé received



goal orientation training. Although no conclusive interpretations of these findings regarding causality can be drawn, it is likely that both mentors and protégés affect one another and the behaviors that they undertake. Given these findings, it calls for more innovative ways of examining and indexing coded mentoring processes in the future, which subsequently may help researchers obtain a better understanding of mentoring relationships in general.

*Similarity of mentor-protégé perceptions.* Most of the mentoring research to date has focused on subjective reports from mentors or protégés after the fact about what occurred during the relationship. The current study found that mentors and protégés were more likely to have similar perceptions when they participated in the same training type relative to when they participated in different training types. Thus, an individual's expectations regarding what was supposed to occur in the relationship may affect his/her judgment about what actually occurred. It has previously been contended that objective reports (i.e., coded data) of mentoring relationship processes are oftentimes valuable to understanding the mentoring relationships in general (e.g., Smith-Jentsch, Scielzo, Yarbrough, & Rosopa, 2008). Similarity of initial expectations may provide another source of information to help in this understanding. Furthermore, most of the studies that have examined both mentor and protégé perceptions (e.g., Wanberg, Kammeyer-Mueller, & Marchese, 2006) generally report rather low correlations. Perhaps providing both mentors and protégés with preparatory training is one way to overcome this limitation and gain improved insight into mentoring relationship processes.

*Computer-mediated communication.* The current study adds to the few other empirical studies examining mentoring relationships occurring through the use of solely computer-mediated communication. This study helps to augment our understanding of mentoring

relationships in this medium, and also provides support for the efficacy of the use of the medium for such purposes.

### Practical Implications

By preparing protégés with a training designed to affect goal orientation states, protégé stress and self-efficacy can be affected. Protégés that approach their mentoring relationships as an opportunity to learn and who feel open to disclosing their concerns and problems, are likely more probable to be receptive to the information that their mentors provide to them. Furthermore, they may also be more likely to receive information from their mentor that can help them resolve the issues that they are facing.

However, one of the most important implications of this study is that mentoring relationships should be more successful when both the mentor and the protégé receive similar preparatory training. Moreover, program administrators may actually be reducing the effectiveness of mentoring relationships by only training mentors (as is what most likely occurs). Furthermore, the results also suggest that by possibly providing mentors and protégés with similar expectations may be the most effective mechanism through which to affect subjective mentoring relationship outcomes. Moreover, the current results argue that training that is effective in modifying behavior may actually be detrimental if the partner is not similarly prepared for the upcoming behavior. Similarly, given that mentor and protégé behaviors are related, it might be plausible that a mentor that undertakes desired behaviors may be able to elicit the protégé to behave in the desired manner. However, as noted above, if the protégé is not expecting these behaviors, he/she may be less likely to believe that mentoring relationship outcomes were obtained.

As previously discussed, novel approaches to examining mentoring relationship processes should be considered. The results of this study suggest that not only should the mentors' behaviors be examined but also the behavior of the protégé. Although direction of causality cannot be determined, it is likely that both affect one another. Dialogue interactivity, which is a process variable that represents a synergy of what mentors and protégés do in the relationship, has previously demonstrated its ability to predict various mentoring relationship outcomes (see the following section for more information). Thus, all behaviors should be collected whenever possible and different methods should be considered when determining how these processes relate to mentoring relationship effectiveness. As argued by Smith-Jentsch and colleagues (2008), dialogue interactivity may provide a relatively easy indicator that can be quickly implemented to assess the quality of electronic mentoring relationships. Specifically, using the simple operationalization of examining speaker transitions, this variable can likely be automatically generated by program administrators, and provides an indicator to determine if some mentoring relationships should be evaluated more closely. In turn, less effective mentors can be identified and remediated.

## Limitations

### *Generalization Issues*

The current study involved university students, specifically, incoming freshmen as protégés and juniors and seniors as mentors. It is likely that in an organizational context many additional political forces might be at play that determine whether mentors and protégés might undertake negative self-disclosure and information/feedback seeking behaviors. However, it could also be argued that employees new to an organization may face many of the trials and

tribulations as incoming freshmen might face. Furthermore, it is likely that the medium might also affect the prevalence of these behaviors. Specifically, it might be less likely for individuals to undertake some of these behaviors in a face-to-face relationship. Finally, different behaviors likely might occur in hierarchical mentoring relationships, in which the mentor is of higher rank and status than the protégé, versus the peer mentoring relationships examined here. Thus, future research should examine how mentoring relationship needs may differ across different contexts for protégés.

### *Effect of the Training*

Given that this was a new training program that was implemented, it may be that certain aspects of the training were not salient enough to have elicited desired states of goal orientation in the cases where states were not affected. However, surprisingly, mentors and protégés were affected differently by the similar training, suggesting that those aspects that they respectively perceived to be more important may have been what they focused their attention on. However, future attempts at modifying states of goal orientation should attempt expanding on different portions of the training, and utilizing longer, more feedback-intensive programs.

### *State Goal Orientation Measures*

The measures used to assess states of goal orientation were designed specifically for this study, and were not previously pilot-tested beforehand. Furthermore, each state was represented by solely two questions per week (due to concerns regarding time requirements). Although many relationships were detected in regards to the goal orientation states used for this study, additional refinement may lead to even stronger indicators. For example, adding additional items to have increased construct coverage in the future may help to increase sensitivity.

### *Coded Goal Oriented Behaviors*

Furthermore, the coding schema used for assessing goal oriented behaviors, was designed specifically for the purposes of this study. In some cases relatively low inter-rater agreement was obtained, indicating that some raters may have been more likely to identify statements as indicative of the constructs for which they were rating. Better rater agreement may have led to a higher ability to detect some of our proposed relationships that were not found for this study. Thus, future research should attempt to refine the strategies undertaken along with the constructs being assessed.

### Conclusion

The current study examined the effects of preparatory mentoring relationship training on mentoring relationship processes and outcomes. It was found that states of goal orientation could be elicited given a relatively short training program designed for this purpose. Furthermore, it was found that mentor and protégé behaviors were related. Specifically, training was more likely to be effective if the partner displayed similar behaviors, thus reinforcing the initial expectations that participants obtained from training. Furthermore, perceptions regarding what occurred during the relationship were more similar when mentors and protégés participated in the same training condition. Finally, it was found that mentoring relationship processes and training type/goal orientation state interacted to predict various mentoring relationship outcomes.

APPENDIX A:  
INSTITUTIONAL REVIEW BOARD APPROVAL FORM



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901, 407-882-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

## Notice of Expedited Initial Review and Approval

From : **UCF Institutional Review Board**  
**FWA00000351, Exp. 5/07/10, IRB00001138**

To : **Shannon A Scielzo**

Date : **June 14, 2007**

IRB Number: **SBE-07-05047**

Study Title: **Training and Mentor/Protege Interactions**

Dear Researcher:

Your research protocol noted above was approved by **expedited** review by the UCF IRB Vice Chair on 6/14/2007. **The expiration date is 6/13/2008.** Your study was determined to be minimal risk for human subjects and expeditable per federal regulations, 45 CFR 46.110. The category for which this study qualifies as expeditable research is as follows:

6. Collection of data from voice, video, digital, or image recordings made for research purposes.
7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

The IRB has approved a **consent procedure which requires participants to sign consent forms.** Use of the approved, stamped consent document(s) is required. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Subjects or their representatives must receive a copy of the consent form(s).

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Advise the IRB if you receive a subpoena for the release of this information, or if a breach of confidentiality occurs. Also report any unanticipated problems or serious adverse events (within 5 working days). Do not make changes to the protocol methodology or consent form before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <http://iris.research.ucf.edu>.

**Failure to provide a continuing review report could lead to study suspension, a loss of funding and/or publication possibilities, or reporting of noncompliance to sponsors or funding agencies.** The IRB maintains the authority under 45 CFR 46.110(e) to observe or have a third party observe the consent process and the research.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Janice Turchin on 06/14/2007 11:56:49 AM EDT

APPENDIX B:  
PROTÉGÉ RECRUITMENT FLYER



## Team-Training and Workforce Development Lab

University of Central Florida



# Online Mentoring Program

### Training begins September 17th!

#### Program

#### Requirements:

1 training session,  
4 online half-hour  
sessions, and  
several measures.  
Under 5 & 1/2 hours  
of commitment!

#### Contact Info:

Shannon Scielzo  
407-421-8550 (cell)  
407-882-0296 (office)  
sscielzo@ist.ucf.edu

The first semester of college can be stressful. That is why we will provide you an online mentor for fall semester. He or she will be a Junior or a Senior at UCF with a minimum GPA of 3.0.

This opportunity provides you a safe, flexible way to obtain information tailored to your unique needs.

Please visit <http://twd.cos.ucf.edu/mentoring> for more information!

#### Program location:

Initial training will occur on campus, at the Psychology Building.

Your sessions and subsequent measures can be completed from any computer with Internet access!

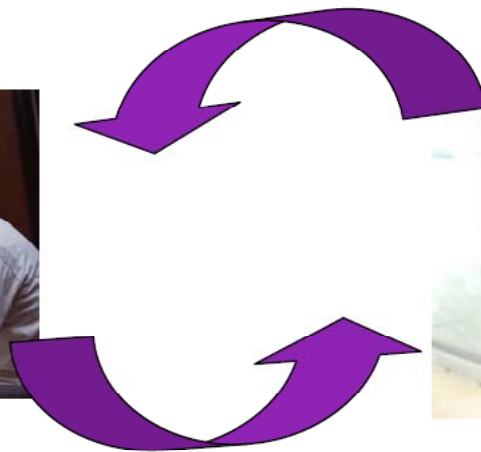
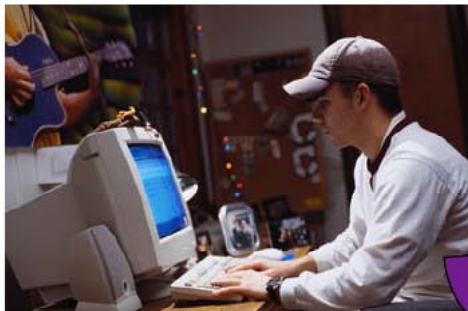
Some possible benefits:

Possibility of higher GPA  
(our research has demonstrated that freshmen who are mentored receive higher GPAs on average than those who are not mentored)

Decreased stress

Increased confidence

Up to 5 & 1/2 hours (11 points) worth of Sona credit are available



## Research Study: Training and Mentor/Protégé Interactions



APPENDIX C:  
MENTOR RECRUITMENT FLYER

## Team-Training and Workforce Development Lab

University of Central Florida

Mentors



# Online Mentoring Program

### Training begins September 17th!

#### Program

#### Requirements:

1 training session,  
4 online half-hour  
sessions, and  
several measures.  
Under 5 hours of  
commitment!

#### Contact Info:

Shannon Scielzo  
407-421-8550 (cell)  
407-882-0296 (office)  
sscielzo@ist.ucf.edu

The first semester of college can be stressful for freshmen. That is why we will we have created this online mentoring program, to pair Juniors and Seniors at UCF with a minimum GPA of 3.0. with first year students.

This opportunity provides you a safe, flexible way to help someone else, and gain mentoring experiences.

Please visit <http://twd.cos.ucf.edu/mentoring> for more information!

#### Program location:

Initial training will occur on campus, at the Psychology Building.

Your sessions and subsequent measures can be completed from any computer with Internet access!

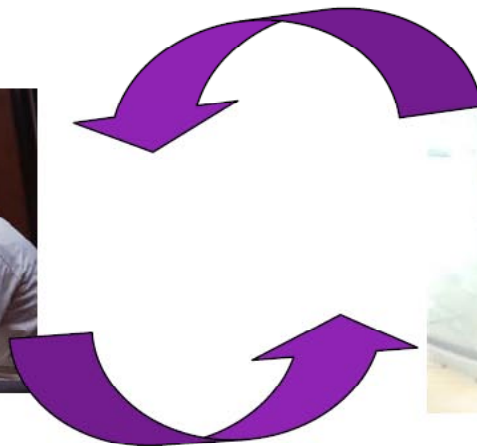
Some possible benefits:

Possibility of helping someone else

Adding this experience to your vitae

Obtaining a letter of completion demonstrating volunteer activities

Up to 5 hours (10 points) worth of Sona credit are available



## Research Study: Training and Mentor/Protégé Interactions

APPENDIX D:  
TRAINING MATERIALS



# Mentoring Orientation

.... To learn how to be a great mentor!



Mentors  
Fall 2007



# Orientation Agenda

- Formal Online Peer-Mentoring
- UCF mentoring program
- Using the Website interface
- Some practice opportunities



# What is Mentoring?





# What is Formal Mentoring?

**Informal**



**Find one another naturally.**

**Formal**



**Assigned to one another by the organization**

## What is Online Mentoring?

- Mentoring through computer-mediated technologies
- Convenient for both mentors and protégés (you can do it in your pajamas 😊)
- Anonymous
- Less inhibiting for protégés



# What is Peer Mentoring?

## Hierarchical Mentorship



## Peer Mentorship



(de Janasz, Sullivan & Whiting, 2003;  
Dreher and Cox, 1996)

# How Does UCF's Online Mentoring Program Work?



# About Your Protégé

- A Freshman
- A volunteer
- May be on main campus or one of the regional campuses
- Could be from any Major in the University



## What's Involved?



- You will have access to an anonymous internal email account for the remainder of the semester that you may use to e-mail your protégé.
- You will meet your protégé online for four 30-minute chat sessions--once a week for **four weeks** (October 1-26<sup>th</sup>).
- You will meet with the same protégé at the same scheduled time each week
- Complete a second set of surveys, and exchange contact information.

# Guidelines



- Anonymous
  - Do not disclose your last name
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    - You will be asked if you wish to give your email to your protégé AFTER the program is completed.
- No inappropriate discussion
  - Illegal activities
  - Sexual harassment
    - Golden Rules
- Email protégé and reschedule meeting with lab when you are aware you will miss a session
- If you cannot login, contact the lab ASAP.

# Program Objectives

- To improve academic performance in freshman year
- To decrease freshman drop-out rates





# How Can You Help?

- Answer their questions
- Give them advice that will help them avoid common pitfalls
- Serve as a role model – an example of a successful student
- Help them to feel accepted here at UCF

# Potential Benefits for Mentors

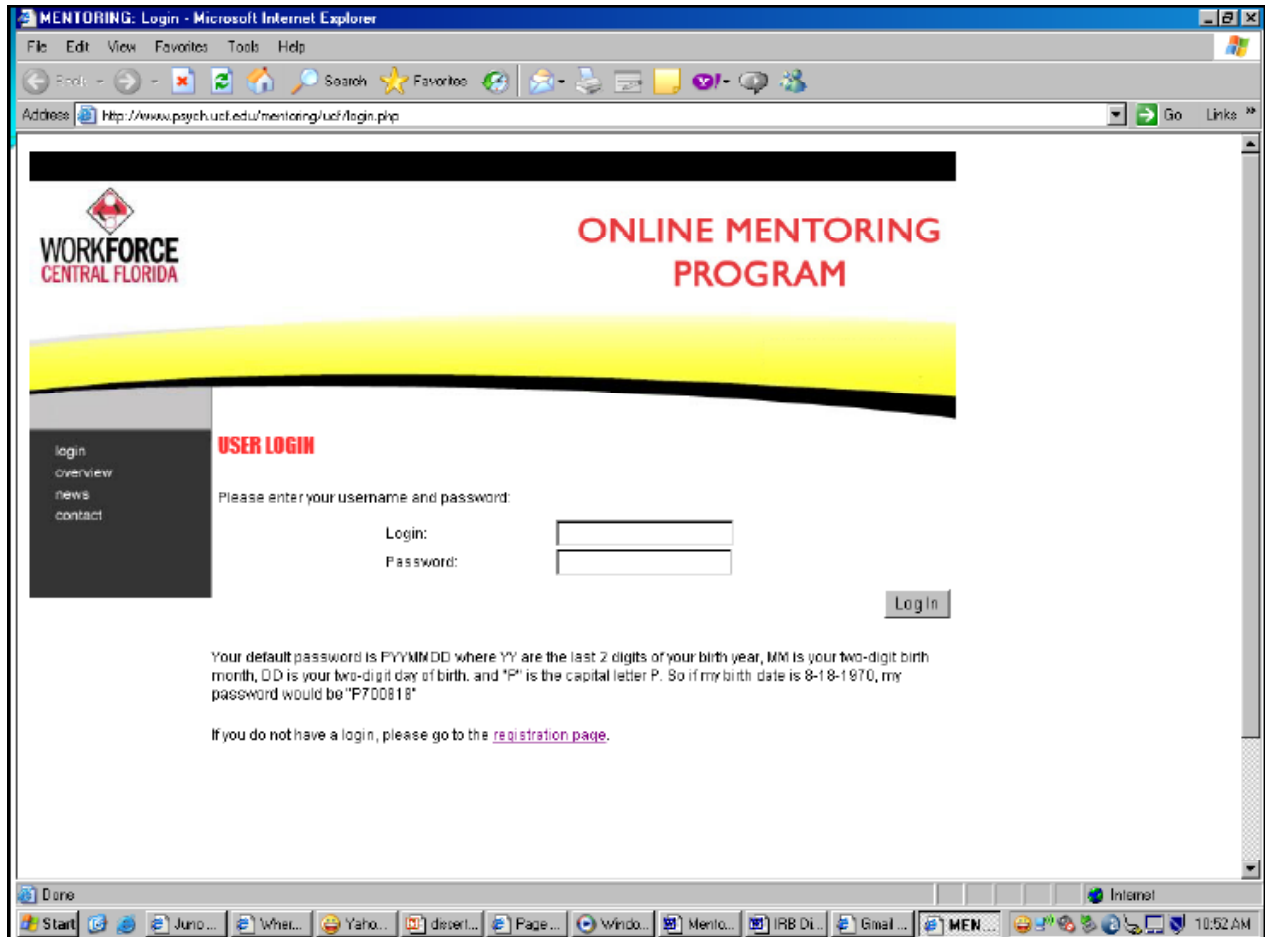
- Research shows that those who mentor tend to have more successful careers
- Participation in this program demonstrates your willingness and ability to guide and to lead others
  - Experience for your resume
  - Letter documenting your participation as a mentor



# Weekly Goals

- Things to accomplish
- Serve as preparation for next chat – provides continuity between chats






America Online 9.0 Security Edition SE - [MENTORING: Educational Section]

File Edit Mail Community Services Safety Window Keyword Sign Off Help

Read 6 Write IM People Safety Settings Music Finance

Quick Start http://www.psych.ucf.edu/mentoring/educational.php



# ONLINE MENTORING PROGRAM

Welcome, Amerida! [You have 0 new messages waiting.](#)

**EDUCATIONAL GUIDE**

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overview  
news  
contact

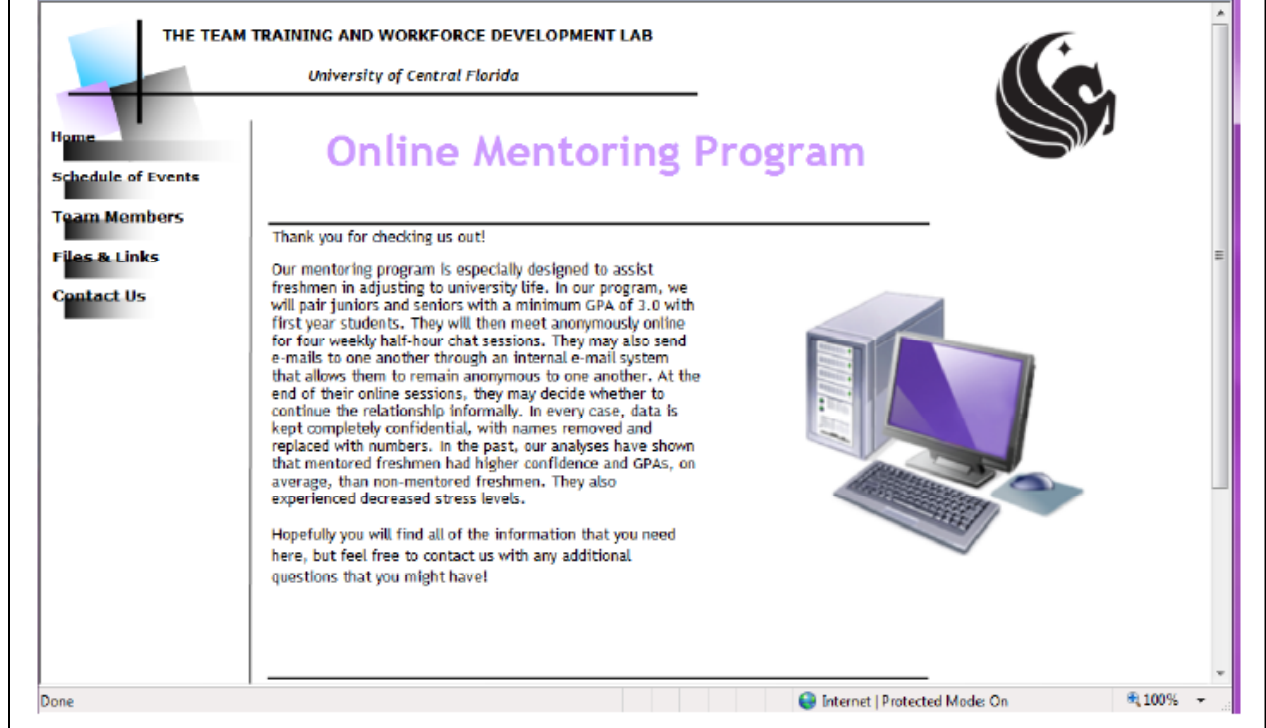
**MEMBERS**

educational  
chat  
messages  
logout

not responded Done

Window (2) Blocking Pop-ups (0) Amerida's Vault

# TWD Website



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Shannon Scielzo

[sscielzo@ist.ucf.edu](mailto:sscielzo@ist.ucf.edu)

407-421-8550

<http://twd.cos.ucf.edu/mentoring>



Team-Training and Workforce Development Lab

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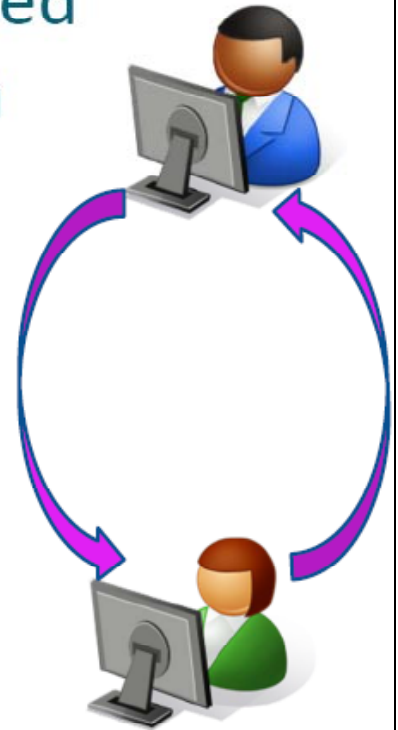


# Some Tips About Online Communication



# Computer-Mediated Communication


- Communication transfer.
  - One message at a time!
  - Information overload.
- Ambiguity.
  - Misintrepretations can occur!
  - Fulfillment of expectations.
  - Verify understanding.




# Computer-Mediated Communication

- Non-verbal cues.
  - E-nonverbals
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    - GREAT!!!!
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# How Well Do You Know Your Emoticons??

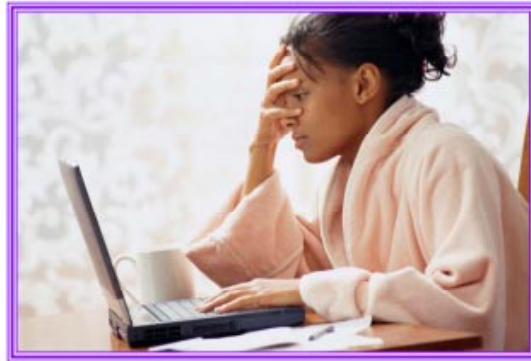


# How Well Do You Know Internet Short-hand??



# Write an Introductory Email

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# Mentoring Orientation

.... To learn how to be a great protégé!



Protégés  
Fall 2007



# Orientation Agenda

- Formal Online Peer-Mentoring
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- Using the Website interface
- Some practice opportunities





# What is Mentoring?



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- A Junior or Senior with a minimum 3.0 GPA
- A volunteer
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- You will meet with the same mentor at the same scheduled time each week
- Complete a second set of surveys, and exchange contact information.
- Complete a final set upon completion of the semester

# Guidelines



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    - You will be asked if you wish to give your email to your protégé AFTER the program is completed.
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- If you cannot login, contact the lab ASAP.



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# How Can You Help?

- Be appreciative!
- Be courteous!
- Be reliable!

# Potential Benefits

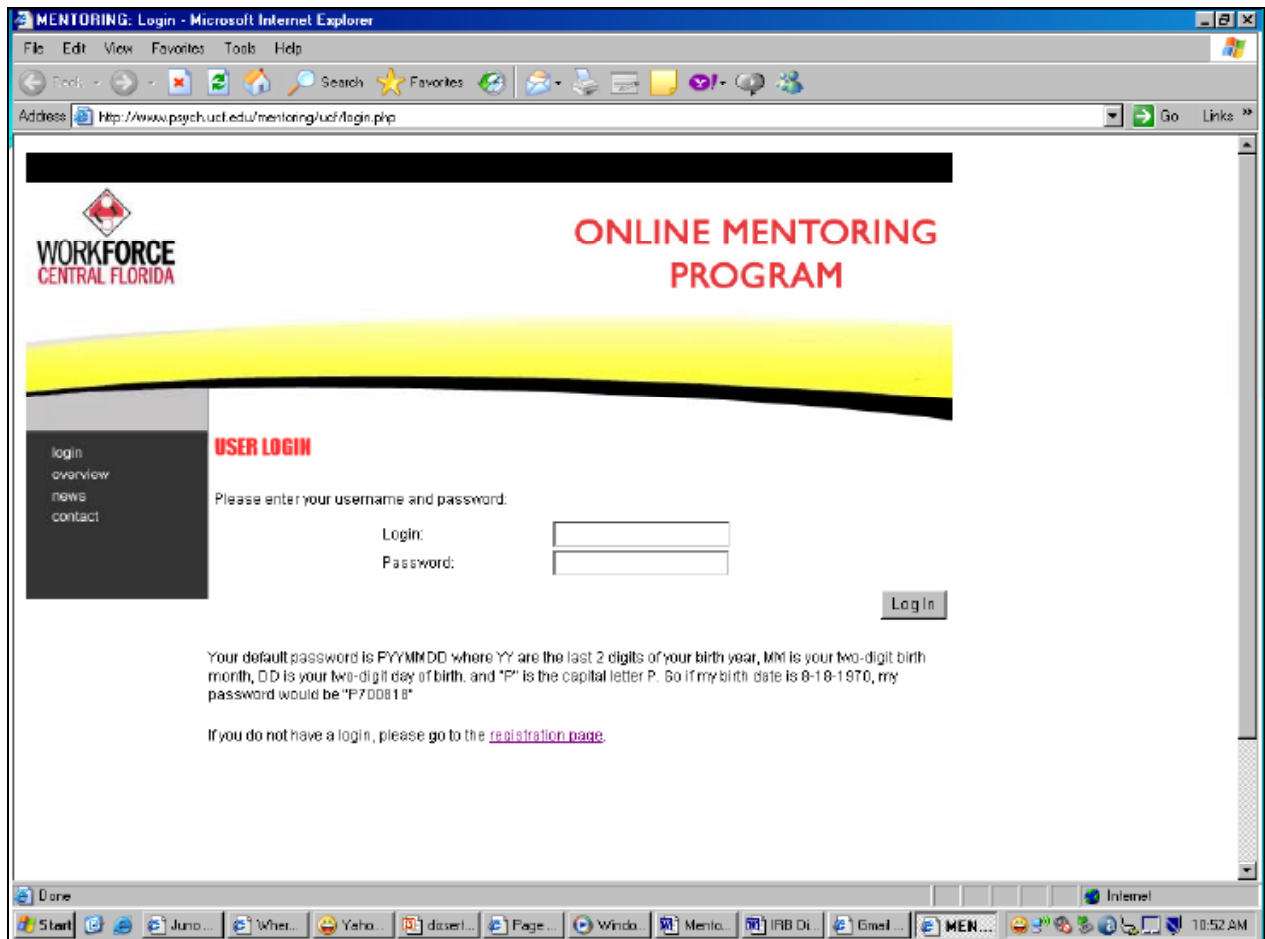
- Increases in:
  - GPA
  - Likelihood of staying in college
- Decreases in:
  - Stress-related health problems
  - Absenteeism



# Weekly Goals

- Things to accomplish
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America Online 9.0 Security Edition SE - [MENTORING: Educational Section]

File Edit Mail Community Services Safety Window Keyword Sign Off Help

Read 6 Write IM People Safety Settings Music Finance

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# ONLINE MENTORING PROGRAM

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overview  
news  
contact

**MEMBERS**

educational  
chat  
messages  
logout

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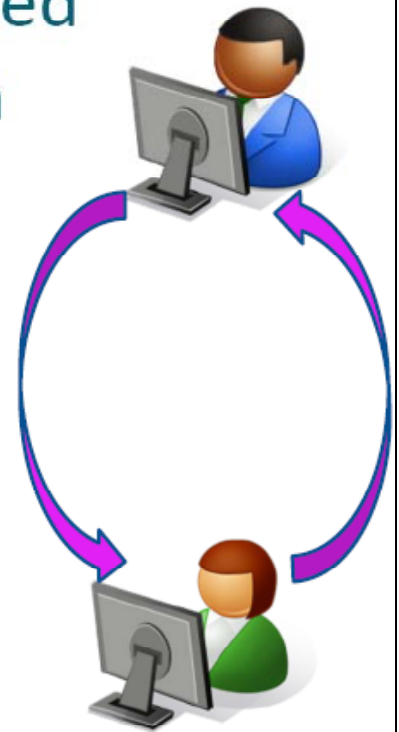


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# How Well Do You Know Your Emoticons??



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# Write an Introductory Email

No, we don't mind if you attend your mentoring sessions in your pajamas.



*Please feel free to contact us with any questions that you have! Your questions help us to improve the program.*

## Sona Credit

- We will post the first portion of your credit once you complete the first set of surveys
- The final portion of credit will be issued once you complete the second set of surveys
- Please let us know if you have not received a confirmation email from Sona (UCF Psychological Research)





# Mentoring Orientation

.... To learn how to be a great mentor!



Mentors  
Fall 2007



# Orientation Agenda

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- To give freshmen the tools they need to thrive at UCF
- To give them the confidence they need to weather the challenges that all college students will inevitably face
- To reduce stress that can interfere with learning
- To help them find a path that works best for them
- To inspire them to be all they can be!!



# Potential Benefits for Mentors

- Learn about yourself by reflecting on your own academic journey
- Satisfaction of passing down lessons learned
- Through your mentoring sessions you will develop your own mentoring skills (expect trial and error for yourself as well)
  - Internet communication skills
  - Providing feedback
  - Coaching
  - Motivating / leading others
- Receive a letter documenting your participation



## Help Your Protégé to See That...

- College is a journey
- Challenges are opportunities to learn and to grow
- Errors are part of the process



# How Can You Help?

- Share stories about the challenges you have faced and how you overcame them
- Help your protégé identify their own challenges and develop strategies for overcoming them
- Encourage your protégé to try new ways of handling situations
- Be a sounding board for their thoughts and feelings
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# Weekly Goals (process-oriented)

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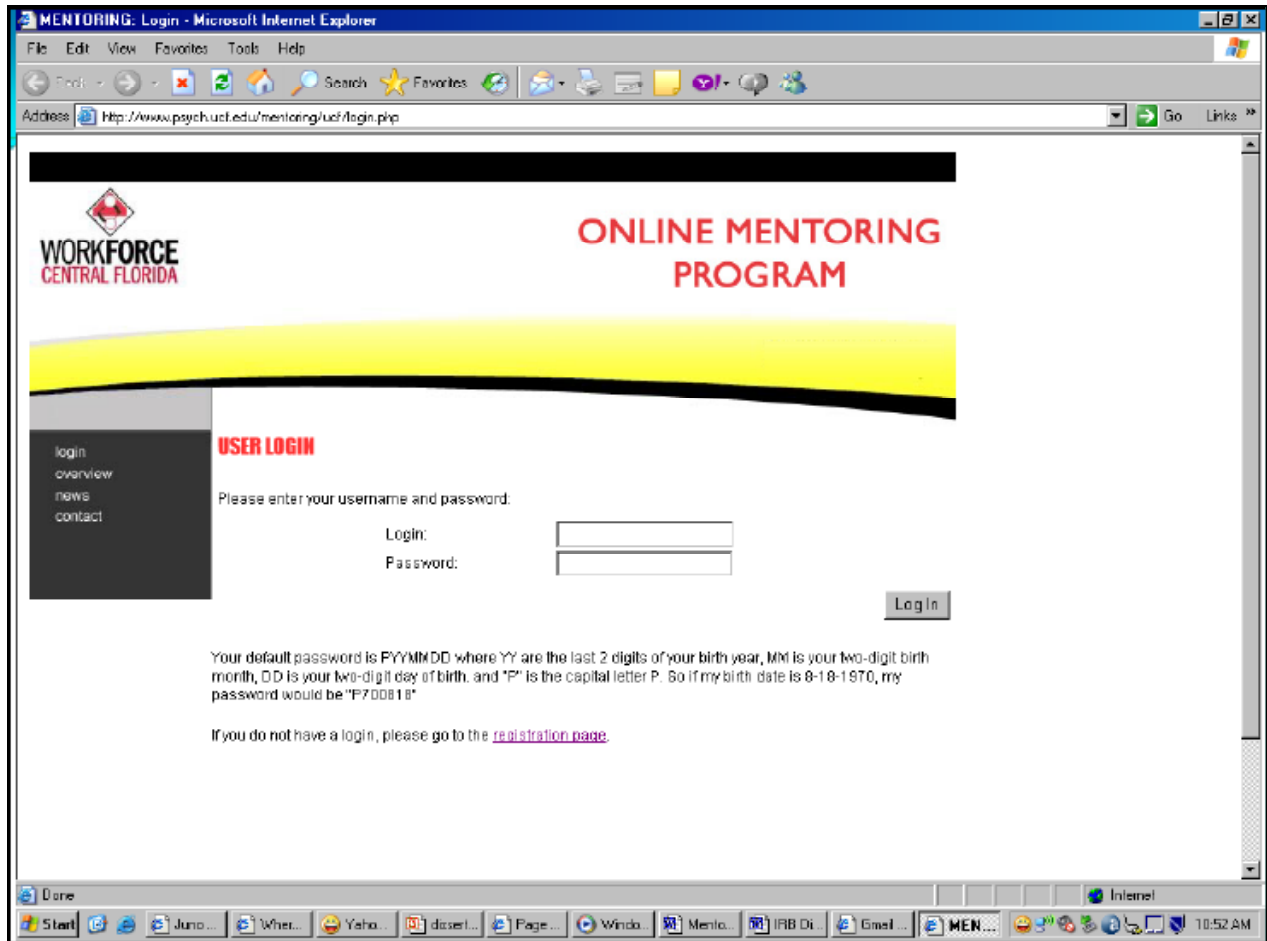


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# Guidelines



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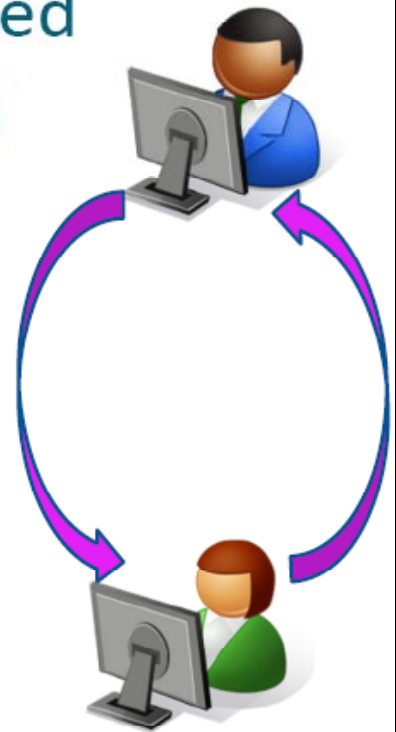
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# Practice Opportunity

## Help Your Protégé to See That...

- College is a journey
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- Errors are part of the process







## Write an Introductory Email

- Compose an introductory email to your protégé that conveys these ideas in your own words 😊

# How Can You Help?

- Share stories about the challenges you have faced and how you overcame them
- Help your protégé identify their own challenges and develop strategies for overcoming them
- Encourage your protégé to try new ways of handling situations
- Be a sounding board for their thoughts and feelings
- Give them constructive feedback
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# Respond to Protégé Statements



## Setting Process-Oriented Goals

- Generate some sample goals for your protégé
  
- Generate some sample goals for yourself

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*Please feel free to contact us with any questions that you have! Your questions help us to improve the program.*



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Protégés  
Fall 2007



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## Remember That...

- College is a journey
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# How Can You Help?

- Be open to sharing challenges that you are currently facing
- Learn from stories about your mentor's past challenges, and the strategies they used to overcome them
- Be willing to try new ways of handling situations suggested by your mentor
- Seek feedback from your mentor
- Let your mentor know how they can help you



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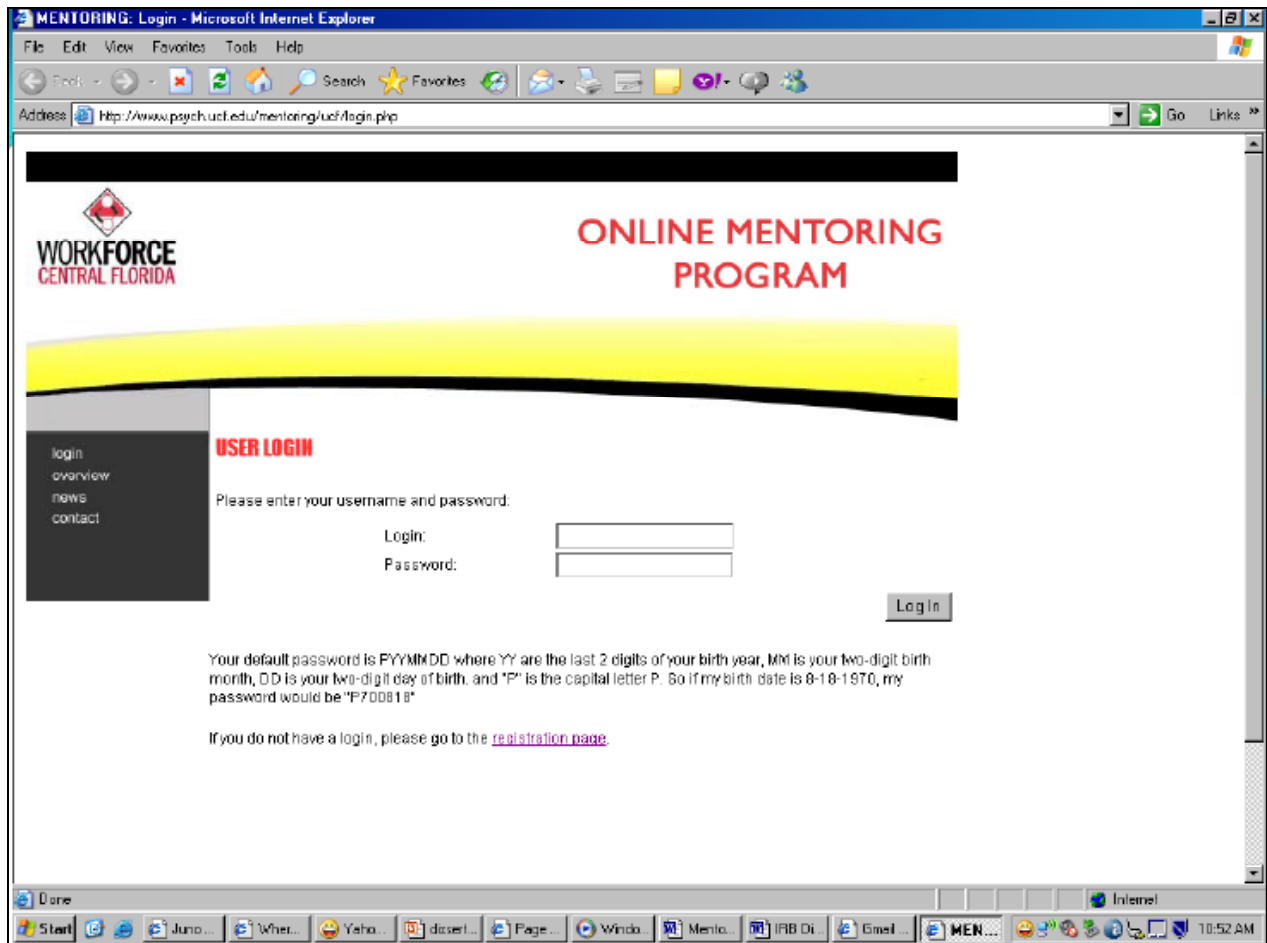


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overview  
news  
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educational  
chat  
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act... Top... Done Window (2) Blocking Pop-ups (0) Ameril... 's Vault

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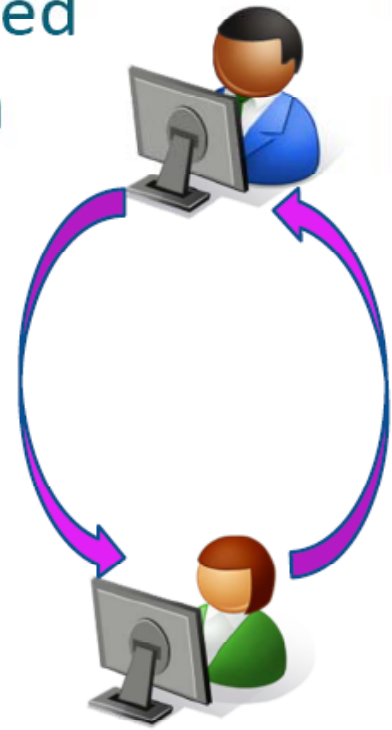


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  - Information overload.
- Ambiguity.
  - Misintrepretations can occur!
  - Fulfillment of expectations.
  - Verify understanding.



# Computer-Mediated Communication

- Non-verbal cues.
  - E-nonverbals
    - :o
    - :)
    - :(
    - Lol
    - GREAT!!!!
  - Augmentation of message



## Write an Introductory E-mail to your mentor

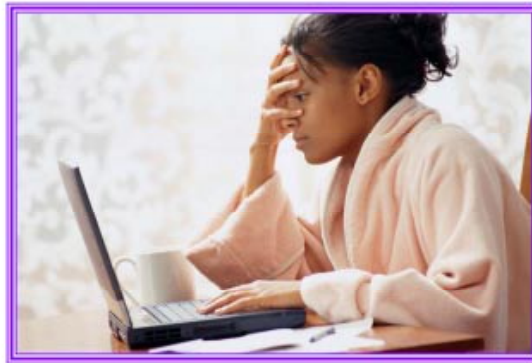
- Let your mentor know that you appreciate their time
- Let your mentor know how they can help you
- Be open to sharing challenges that you are currently facing



## Write Some Sample Process-oriented Goals

- What are some process-oriented goals you might set with your mentor?

No, we don't mind if you attend your mentoring sessions in your pajamas.



*Please feel free to contact us with any questions that you have! Your questions help us to improve the program.*

Mentor Goal Orientation Practice Materials

What would you say? Let's practice!

**MENTOR EXAMPLES**

- ◆ Plato 342: I'm really scared about having to take Microbiology. I'm not very good at some of these science classes.

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- ◆ Plato 342: More than anything I would love to pursue a medical degree, but I really don't think that I'm smart enough to succeed.

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- ◆ Plato 342: I think that I am failing my sociology class.

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- ◆ Plato 342: I came from a really small town where everyone knew everyone else, and we were all the same. But here, I feel like in order to have friends I have to 'forget' myself and all the things that I believe in.

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Setting Goals:  
Let's Practice!

- ◆ Generate 1 specific, process-oriented goal that you have for yourself for the mentoring program.

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- ◆ Generate 3 process-oriented goals that might be of value to your hypothetical protégé (think about when you were a freshmen, and what goals might have been relevant to helping you). Specifically, generate one goal to be completed by the next mentoring session, one to be completed by the end of the mentoring program, and one to be completed by the end of the semester.

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Protégé Goal Orientation Practice Materials

What would you say? Let's practice!

**Protégé Examples**

- ◆ Socrates 643: Is there anything specific that you would like to get out of this mentoring program?

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- ◆ Socrates 643: You sound down - But you're only a freshman, unfortunately it'll get worse.

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- ◆ Socrates 643: I remember when I started off as a freshman... It was so overwhelming! It was totally different than what I expected... How is it going for you?

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- ◆ Socrates 643: I feel that I have been very successful at school. But, I'm not really sure how I can help you.

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Setting Goals:  
Let's Practice!

- ◆ Generate 1 specific, process-oriented goal that you have for yourself for the mentoring program.

---

---

---

- ◆ Generate 3 process-oriented goals that might be of value for your hypothetical mentor, so that you can obtain the skills/information/friendship that you want. Specifically, generate one goal to be completed by the next mentoring session, one to be completed by the end of the mentoring program, and one to be completed by the end of the semester.

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**How well do you know your emoticons?**

*Define each of the following emoticons in your own words:*

- 1) :) or :-)
- 2) :( or :-(
- 3) :] or :-]
- 4) :[ or :-[
- 5) :P or :-P
- 6) :D or :-D
- 7) :I or :-I
- 8) :-/ or :-\
- 9) :Q or :-Q
- 10) :S or :-S
- 11) :@ or :-@
- 12) :O or :-O

**How well do you know common internet short-hand?**

*Define each of the following abbreviations:*

- 1) 2
- 2) 4
- 3) AAMOF
- 4) AFK
- 5) BBFN
- 6) BBL
- 7) BFN
- 8) BTW
- 9) BRB
- 10) BYKT
- 11) CMIIW
- 12) COB
- 13) CYA
- 14) EOL
- 15) FAQ
- 16) FITB
- 17) FWIW
- 18) FYI
- 19) GC
- 20) GL
- 21) GTG
- 22) HTH

- 23) IAC
- 24) IAE
- 25) IDK
- 26) IMCO
- 27) IMHO
- 28) IMNSHO
- 29) IMO
- 30) IOW
- 31) JK
- 32) JP
- 33) L8TR
- 34) LOL
- 35) LMAO
- 36) MHOTY
- 37) NRN
- 38) OIC
- 39) OMG
- 40) OTOH
- 41) ROF/ROFL/ROTFL
- 42) RSN
- 43) SITD
- 44) TIA
- 45) TIC
- 46) TTYL
- 47) TYVM
- 48) U
- 49) W/E
- 50) WYSIWYG
- 51) <G>
- 52) <J>
- 53) <L>
- 54) <S>
- 55) <Y>

## Computer-Mediation Communication Handout Given to All Participants

### Common Emoticons

1. :) or :-) Expresses happiness, sarcasm, or joke
2. :( or :-( Expresses unhappiness
3. :] or :-] Expresses jovial happiness
4. :[ or :-[ Expresses despondent unhappiness
5. :P or :-P Playful, Sticking out tongue
6. :D or :-D Expresses jovial happiness
7. :I or :-I Expresses indifference
8. :-/ or :-\ Indicates undecided, confused, or skeptical. Also :/ or :\  
.
9. :Q or :-Q Expresses confusion
10. :S or :-S Expresses incoherence or loss of words
11. :@ or :-@ Expresses shock or screaming
12. :O or :-O Indicates surprise, yelling or realization of an error ("uh oh!")

### Common Internet Short-Hand.

- |     |       |                              |
|-----|-------|------------------------------|
| 1.  | 2     | to/too                       |
| 2.  | 4     | for                          |
| 3.  | AAMOF | as a matter of fact          |
| 4.  | AFK   | away from computer           |
| 5.  | BBFN  | bye bye for now              |
| 6.  | BBL   | be back later                |
| 7.  | BFN   | bye for now                  |
| 8.  | BTW   | by the way                   |
| 9.  | BYKT  | but you knew that            |
| 10. | BRB   | be right back                |
| 11. | CMIIW | correct me if I'm wrong      |
| 12. | COB   | close of business            |
| 13. | CYA   | see ya                       |
| 14. | EOL   | end of lecture               |
| 15. | FAQ   | frequently asked question(s) |
| 16. | FITB  | fill in the blank            |
| 17. | FWIW  | for what it's worth          |
| 18. | FYI   | for your information         |
| 19. | GC    | good call                    |
| 20. | GL    | good luck                    |

21.	GTG	got to go
22.	HTH	hope this helps
23.	IAC	in any case
24.	IAE	in any event
25.	IDK	I don't know
26.	IMCO	in my considered opinion
27.	IMHO	in my humble opinion
28.	IMNSHO	in my not so humble opinion
29.	IMO	in my opinion
30.	IOW	in other words
31.	JK	just kidding
32.	JP	just playing
33.	L8TR	later
34.	LOL	lots of luck or laughing out loud
35.	LMAO	Laughing my *&& off
36.	MHOTY	my hat's off to you
37.	NRN	no reply necessary
38.	OIC	oh, I see
39.	OMG	oh my goodness
40.	OTOH	on the other hand
41.	ROF/ ROFL/ROTFL	rolling on the floor laughing
42.	RSN	real soon now
43.	SITD	still in the dark
44.	TIA	thanks in advance
45.	TIC	tongue in cheek
46.	TTYL	talk to you later
47.	TYVM	thank you very much
48.	u	you
49.	w/e	whatever
50.	WYSIWYG	what you see is what you get
51.	<G>	Grinning
52.	<J>	Joking
53.	<L>	Laughing
54.	<S>	Smiling
55.	<Y>	Yawning



APPENDIX E:  
MENTORING INFORMATION WEBSITE SCREENSHOTS

# Mentoring Information Website Screenshots

THE TEAM TRAINING AND WORKFORCE DEVELOPMENT LAB  
University of Central Florida



Home  
Schedule of Events  
Team Members  
Files & Links  
Contact Us

## Online Mentoring Program

Thank you for checking us out!


Our mentoring program is especially designed to assist freshmen in adjusting to university life. In our program, we will pair Juniors and seniors with a minimum GPA of 3.0 with first year students. They will then meet anonymously online for four weekly half-hour chat sessions. They may also send e-mails to one another through an internal e-mail system that allows them to remain anonymous to one another. At the end of their online sessions, they may decide whether to continue the relationship informally. In every case, data is kept completely confidential, with names removed and replaced with numbers. In the past, our analyses have shown that mentored freshmen had higher confidence and GPAs, on average, than non-mentored freshmen. They also experienced decreased stress levels.

Hopefully you will find all of the information that you need here, but feel free to contact us with any additional questions that you might have!



Done Internet | Protected Mode: On

THE TEAM TRAINING AND WORKFORCE DEVELOPMENT LAB  
University of Central Florida



Home  
Schedule of Events  
Team Members  
Files & Links  
Contact Us

## Files & Links

Here are several links and files that might be of value to you.

**Registration**  
Ready to register for the program?  
[Click here.](#)

**UCF Golden Rules**  
Please review these policies at your convenience before beginning your sessions.

**Informed Consent Forms**  
Lost your form, or want to preview the informed consent? [Click here.](#)

**Sona Experimental Credit**  
Need to sign up? [Click here](#) and sign up for the study titled *Training and*

Home  
Schedule of Events  
Team Members  
Files & Links  
Contact Us

## Schedule of Events

Steps to participate in the program:

1. [Click here](#) and register yourself. Note: you will be directed from one survey to another (the second is obtaining your availability, and can be accessed [here](#) if needed). Please be sure to click submit on the final pages! We will contact you within 24 hours and provide you with a participant number (and a link so that you complete the next steps).
2. You will need to complete your first set of surveys. You may do so before receiving our confirmation email if you wish, or you may wait. You may also complete the surveys at the time of training if you prefer. [Protoges, click here.](#)
3. We will email you with several potential training times. Show up to one of your designated times.
4. We will email you once you are paired with a mentor/protoge, and let you know when your mentoring sessions will be.
5. Please login approximately 15 minutes before your anticipated session times, as you will need to answer a few quick questions beforehand. You will meet once a week, for four-consecutive weeks (same time day), for 30 minutes each session.
6. We will email you another set of surveys, and provide you the opportunity to continue your mentoring session (i.e., provide your email address to you mentor/protoge) at this time.
7. Protoges only: You will answer a final set of surveys and

## SEPTEMBER, 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

### Schedule of Events

September 17th to the 28th. Mentoring orientations and training begin! Make sure you sign up as soon as possible.

October 1 through the 26th. Mentoring sessions!

October 28th through November 20th. Final data the



APPENDIX F:  
PARTICIPANT INFORMED CONSENT FORMS

PARTICIPANT INFORMED CONSENT FORM

Name:

Identification No.:

**INFORMED VOLUNTARY CONSENT TO PARTICIPATE**

**Please read this consent document carefully before you decide to participate in this study.**

1. You are being asked to voluntarily participate in a research study titled “Training and Mentor/Protégé Interactions”, This study is being conducted by Shannon Scielzo (a doctoral student at UCF), as part of her dissertation requirements under the supervision of Dr. Kimberly A. Smith-Jentsch.

2. We are examining the effectiveness of mentor/protégé training on mentoring relationships processes and outcomes. You will be asked to attend an initial training session, and participate in a series of mentor/protégé communication sessions. Various questionnaire measures will be collected at both the beginning and end of the study, and the text from the electronic chat sessions will be saved and transcribed for behavioral coding. Electronic communications and data collected from this study will be safely stored under lock and key. You do not have to answer any questions that you do not wish to answer on any of the questionnaires, and have the right to examine the questionnaires before signing this informed consent form. The purpose of this research study is to investigate the variables that impact the success of mentoring relationships.

3. You will be asked to:

- a. Attend a training/orientation session (what you are attending today) that details what the mentoring entails, what our research entails (the measures, the chat transcripts, etc), an explanation of the informed consent, a training session, and filling out the first set of surveys. This will last up to 2 hours (worth up to 4-points of Sona credit).
- b. Participate in four 30-minute online mentoring chat sessions (one a week, for 4-consecutive weeks) during the month of October (make-ups and rescheduling available as needed). You may attend your mentoring sessions from any computer from which you have Internet access.
- c. In addition, you will have access to an internal e-mail system to communicate with your mentor/protégé for up to six months. This is not required for participation in the study, but may be utilized by participants if they so desire.
- d. A second set of measures at the end of the mentoring period, which will require up to an hour for you to complete. This survey will be available from the end of the mentoring sessions until November 21, and can be completed from any computer with Internet access (2-points of Sona credit)
- e. A third set upon completion of the semester, which will take up to a half-hour to complete (1-point of Sona credit) (protégés only).

4. The investigator believes that the risks or discomforts to you are as follows: **None**

5. You understand that you will receive no direct benefit other than:

- Knowledge that participation in this study will aid efforts to improve the performance of future students that participate in the program.
- A copy of any publications resulting from the current study if requested
- An opportunity to receive coaching from an experienced upper classman or professional
- Mentors may receive a letter of completion to demonstrate volunteer activities undertaken
- Sona credit – up to 11 points for protégés (5 and ½ hours of participation) and 10 points for mentors (5 hours of participation).

6. Furthermore, please note that you are not required to answer any questions that you do not feel comfortable answering during the course of this study. If any questions are not clear, please ask for clarification from the researchers.

7. Your identity will be kept confidential. Your confidentiality during the study will be ensured by assigning you a coded identification number prior to the first data collection. The list connecting your name to this number will be kept in a locked file. Your name will not be directly associated with any data. The confidentiality of the information related to your participation in this research will be ensured by maintaining records only coded by identification numbers. Copies of electronic communications will be kept under lock and key, and will only be viewed by lab researchers. Furthermore, the online data collection mechanisms (i.e., the mentoring website and survey collection website) are secure thus further assuring confidentiality of your information. Individual data will be aggregated to the group level, thus individual responses will not be published nor presented.

8. Students under the age of 18 must obtain parental consent in order to participate in the research portion of this study. If parental consent cannot be obtained, you may still participate in the mentoring portion of the study (i.e., no data will be collected) and/or an alternative assignment will be made available to you to assure equivalent Sona credit when desired.

9. If I have any questions about this study I should contact the following individuals:

**Principal Investigators:**

**Shannon Scielzo: 407-421-8550 (cell), 407-882-0296 (office)**

**E-mail: [sscielzo@ist.ucf.edu](mailto:sscielzo@ist.ucf.edu)**

**Dr. Kimberly A. Smith-Jentsch Phone: 407-823-3577**

**E-mail: [kjentsch@mail.ucf.edu](mailto:kjentsch@mail.ucf.edu)**

10. My participation in this study is completely voluntary and will not affect my grade or status in any program or class.

11. My participation in this study may be stopped by the investigator at any time without my consent if it is believed the decision is in my best interest. There will be no penalty or loss of benefits to which I am otherwise entitled at the time my participation is stopped.

12. No out of pocket costs to me may result from my voluntary participation in this study.

13. If I decide to withdraw from further participation in this study, there will be no penalties. To ensure my safety and orderly withdrawal from the study, I will inform the Principal Investigator, Dr. Kimberly Smith-Jentsch.

14. Official government agencies may have a need to inspect the research records from this study, including mine, in order to fulfill their responsibilities.

15. I have been informed that my consent form will be stored under lock and key. This informed consent form will be kept in a locked filing cabinet separately from any other data associated with this study, and destroyed after a 3-year period. All datum from the study will be destroyed once the researchers have completed their analyses.

16. I have been informed that the text from my communications will be transcribed and will be kept under lock and key.

17. This research study has been reviewed and approved by the UCF Institutional Review Board. Questions or concerns about research participants' rights may be directed to the UCF IRB office, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246. The telephone number is (407) 823-2901.

18. I have been given an opportunity to ask questions about this study and its related procedures and risks, as well as any of the other information contained in this consent form. I have been given the opportunity to review the questionnaire items that I will be asked to fill out. All my questions have been answered to my satisfaction, and I understand what has been explained in this consent form about my participation in this study. I do not need any further information to make a decision whether or not to volunteer as a participant in this study. By my signature below, I give my voluntary informed consent to participate in the research as it has been explained to me, and I acknowledge receipt of a copy of this form for my own personal records. Furthermore, I acknowledge that I am over 18 years of age and am able to give consent to participate in this study (or, am under the age of 18 but have obtained parental consent in addition to my consent). Finally, I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

\_\_\_\_\_  
Volunteer Signature                      Print Name                      Date

I was present during the explanation referred to above, as well as during the volunteer's opportunity to ask questions, and hereby witness the signature.

\_\_\_\_\_  
Investigator Signature                      Print Name                      Date

Parental Informed Consent Form

Dear Parent/Guardian:

Your child has expressed a desire to participate in the UCF Online Mentoring Program. This study is being conducted by Shannon Scielzo (a doctoral student at UCF), as part of her dissertation requirements under the supervision of Dr. Kimberly A. Smith-Jentsch, in conjunction with the University of Central Florida, College of Sciences. This program represents a research endeavor investigating the effects of mentoring on college freshman adjustment. The primary purpose of this study is to explore if and how mentoring can help freshmen lower their stress levels and achieve academic success.

The research project involves pairing your child with a Junior or Senior at UCF who will serve as your child’s mentor for the Fall 2007 semester. Your child will attend a 2 hour training session, and meet with his/her mentor anonymously online for four weekly half-hour sessions. Chat transcripts will be saved by participant number for later coding. During the course of the semester, we ask participants to respond to surveys in order to gauge the effectiveness of the program. These surveys can be filled out online, and we will keep the data completely confidential. Paper data will be stored in a locked cabinet in our research lab and electronic data will be stored in password-protected computer files.

Your child will be allowed the right to refuse to answer any questions on the surveys that make him/her uncomfortable, and he/she may stop participating in this research at any time. Your child will be reminded of this immediately prior to the start of the program.

With your consent, your child will be able to participate in the UCF Online Mentoring Program. This is an excellent opportunity for your child to gain academic and social guidance at this critical time in his/her life.

You may contact Shannon at 407 421-8550 or email her at [sscielzo@ist.ucf.edu](mailto:sscielzo@ist.ucf.edu) with any questions or concerns that you might have. You may also contact her major professor, Dr. Kimberly Jentsch at 407-823-3577 or by email at [kjentsch@mail.ucf.edu](mailto:kjentsch@mail.ucf.edu) for any questions you have regarding the research procedures. Also, you may visit <http://twd.cos.ucf.edu/mentoring> to learn more about the program and our research. Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (IRB). Questions or concerns about research participants’ rights may be directed to the UCF IRB office, University of Central Florida, Office of Research & Commercialization, University Towers, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246, or by campus mail 32816-0150. The hours of operation are 8:00 am until 5:00 pm, Monday through Friday except on University of Central Florida official holidays. The telephone number is (407) 823-2901.

Please indicate your permission below:

I have read the procedure described above.

I have received a copy of this form to keep for my records

I give consent for my child to participate in the UCF Online Mentoring Program. **Over →**

I voluntarily give my consent for my child, \_\_\_\_\_, to participate in Shannon Scielzo's study titled, "Training and Mentor/Protégé Interactions".

\_\_\_\_\_/\_\_\_\_\_  
Parent/Guardian Date

**Please sign and fax this form to:**

**UCF Psychology Department:**

**407 823 5862**

**(Attn: Shannon Scielzo)**

APPENDIX G:  
PROTÉGÉ DEMOGRAPHIC INFORMATION

Protégé Demographic Information

1. Gender (please circle the correct response):      Male                                      Female

2. Age:                                      \_\_\_\_\_

3. Please indicate which semester you are currently enrolled in:

- A. First Semester
- B. Second Semester
- C. Third Semester

4. Class Standing                      A. Conditionally Accepted

- B. Freshman
- C. Sophomore
- D. Junior
- E. Senior

5. Intended Major:                      \_\_\_\_\_

6. GPA: (High School if no College GPA yet)                      \_\_\_\_\_

7a. SAT Score:                      \_\_\_\_\_      7b. ACT Score                      \_\_\_\_\_



8. Which Race/Ethnicity do you feel describes you?

Race/Ethnicity	Check <b>all</b> that you feel apply	Check the <b>one</b> that you feel most closely describes you
White/Caucasian		
Black/African American		
Hispanic		
Asian		
Pacific Islander		
American Indian		
Other: Please Describe		

You will be assigned your extra credit in advance of completion of this semester. However, you are still expected to complete a short exit survey after the semester is completed.

Please complete your contact information below, and also include how we can contact you after the semester is over.

Local phone number: \_\_\_\_\_

Additional phone number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Contact information after the semester: \_\_\_\_\_

Furthermore, we will with your permission, obtain your GPA after grades are available for this upcoming semester. Do you provide us with permission to obtain your GPA (circle your answer)?

YES

NO

10. What type of connection will you be using for your mentoring sessions? (e.g. broadband, dialup)

\_\_\_\_\_

11. From what location will you be accessing your E-mentoring sessions? Home, school, work?

---

12. Can we call you from the phone number that you provided above during the mentoring sessions (while you are online)? **YES** or **NO**.

If not, what number we can call you at (if one is available)? Number\_\_\_\_\_

APPENDIX H:  
MENTOR DEMOGRAPHIC INFORMATION



10. We would like to be able to contact you at the end of the semester to find out if this program was helpful to you. You are under no obligation to provide us with this information, however, if you don't mind us calling you or emailing you, please provide both your local and permanent phone numbers, and/or email address.

Local phone number: \_\_\_\_\_

Permanent phone number: \_\_\_\_\_

Email Address: \_\_\_\_\_

APPENDIX I:  
TRAIT GOAL ORIENTATION

## Trait Goal Orientation

**Please indicate on the scale from 1-6 your level of agreement or disagreement with the following statements.**

		<b>Strongly Disagree</b>				<b>Strongly Agree</b>
<b>Learning Goal Orientation</b>						
1. I am willing to select a challenging assignment that I can learn a lot from.	1	2	3	4	5	6
2. I often look for opportunities to develop new skills and knowledge.	1	2	3	4	5	6
3. I enjoy challenging and difficult tasks where I'll learn new skills.	1	2	3	4	5	6
4. For me, development of my ability is important enough to take risks.	1	2	3	4	5	6
5. I prefer to work in situations that require a high level of ability and talent.	1	2	3	4	5	6
<b>Avoid Goal Orientation</b>						
6. I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others.	1	2	3	4	5	6
7. Avoiding a show of low ability is more important to me than learning a new skill.	1	2	3	4	5	6
8. I'm concerned about taking on a task if my performance would reveal that I had low ability.	1	2	3	4	5	6
9. I prefer to avoid situations where I might perform poorly.	1	2	3	4	5	6

APPENDIX J:  
PROTÉGÉ ACADEMIC-RELATED STRESS



Academic-Related Stress Scale  
Items adapted from Allen, McManus, and Russell (1999)

**Please indicate on the scale from 1-6 your level of agreement or disagreement with the following statements.**

	<b>Strongly Disagree</b>					<b>Strongly Agree</b>
1. My schoolwork this semester has had a negative impact on my health.	1	2	3	4	5	6
2. I have been under a great deal of tension this semester.	1	2	3	4	5	6
3. Problems with school have kept me awake at night this semester.	1	2	3	4	5	6

APPENDIX K:  
PROTÉGÉ ACADEMIC SELF-EFFICACY

Protégé-Reported Academic Self-Efficacy  
Solberg et al., (1993)

How confident are you that you could successfully complete the following tasks?

	Not at all Confident					Extremely Confident
1. Research a term paper.	1	2	3	4	5	6
2. Write course papers.	1	2	3	4	5	6
3. Do well on your exams.	1	2	3	4	5	6
4. Take good class notes.	1	2	3	4	5	6
5. Keep up to date with your schoolwork.	1	2	3	4	5	6
6. Manage time effectively.	1	2	3	4	5	6
7. Understand your textbooks.	1	2	3	4	5	6
8. Participate in class discussions.	1	2	3	4	5	6
9. Ask a question in class.	1	2	3	4	5	6
10. Get a date when you want one.	1	2	3	4	5	6
11. Talk to your professors.	1	2	3	4	5	6
12. Talk to university staff.	1	2	3	4	5	6
13. Ask a professor a question.	1	2	3	4	5	6
14. Make new friends at college.	1	2	3	4	5	6
15. Join a student organization.	1	2	3	4	5	6

APPENDIX L:  
PROTEGE STATE GOAL ORIENTATION

Protégé State Goal Orientation

Please indicate the extent to which you agree or disagree to each of the following statements, utilizing the 1 (strongly disagree) to 6 (strongly agree) response format provided.

	<b>Strongly Disagree</b>					<b>Strongly Agree</b>
<i>State Learning Goal Orientation</i>						
1. Today, I am most interested in talking about strategies I can use to reach my fullest potential.	1	2	3	4	5	6
2. I hope to learn something about myself though the chat I have with my mentor today.	1	2	3	4	5	6
<i>State Avoid Goal Orientation</i>						
1. Today, I am most interested in talking about how I can avoid situations where I may fail.	1	2	3	4	5	6
2. I am not in the mood to talk about my personal challenges today.	1	2	3	4	5	6

APPENDIX M:  
MENTOR STATE GOAL ORIENTATION

## Mentor State Goal Orientation

Please indicate the extent to which you agree or disagree to each of the following statements, utilizing the 1 (strongly disagree) to 6 (strongly agree) response format provided.

	<b>Strongly Disagree</b>			<b>Strongly Agree</b>		
<i>State Learning Goal Orientation</i>						
1. What my protégé needs most from me today is knowledge that will help him/her to reach his/her fullest potential	1	2	3	4	5	6
2. I hope to learn something about myself though the chat I have with my protégé today.	1	2	3	4	5	6
<i>State Avoid Goal Orientation</i>						
3. What my protégé need most from me today is knowledge that will help him/her to reach his/her fullest potential.	1	2	3	4	5	6
4. I am not in the mood to talk about my personal challenges today.	1	2	3	4	5	6

APPENDIX N:  
PROTÉGÉ-REPORTED PSYCHOSOCIAL SUPPORT FUNCTIONS RECEIVED



Psychosocial Support Measure  
Allen, McManus, and Russell (1999)

**Please indicate on the scale from 1-6 the extent to which the following statements describe the relationship you had with your mentor.**

	Very Slight Extent			Very Large Extent		
1. My mentor shared the history of his/her academic career with me.	1	2	3	4	5	6
2. My mentor encouraged me to prepare for academic advancement.	1	2	3	4	5	6
3. My mentor encouraged me to try new ways of behaving in school.	1	2	3	4	5	6
4. My mentor demonstrated good listening skills in our conversations.	1	2	3	4	5	6
5. My mentor discussed my questions and concerns regarding feelings of competence.	1	2	3	4	5	6
6. My mentor discussed my questions and concerns regarding commitment to academic advancement.	1	2	3	4	5	6
7. My mentor discussed my questions and concerns regarding relationships with peers.	1	2	3	4	5	6
8. My mentor discussed my questions and concerns regarding relationships with faculty.	1	2	3	4	5	6
9. My mentor I discussed my questions and concerns regarding work/family conflicts.	1	2	3	4	5	6
10. My mentor shared personal experiences as a different perspective to my problems.	1	2	3	4	5	6

		Very Slight Extent				Very Large Extent	
		1	2	3	4	5	6
11.	My mentor encouraged me to talk openly about anxiety and fears that detract from my school work.	1	2	3	4	5	6
12.	My mentor conveyed empathy for the concerns and feelings I have discussed with him/her.	1	2	3	4	5	6
13.	I believe that my mentor kept feelings and doubts I shared with him/her in strict confidence.	1	2	3	4	5	6
14.	My mentor conveyed feelings of respect for me an individual.	1	2	3	4	5	6

APPENDIX O:  
PROTÉGÉ-REPORTED ACADEMIC CAREER DEVELOPMENT FUNCTIONS RECEIVED

Academic Career Development Functions Received  
Allen, McManus, and Russell (1999)

**Please indicate on the scale from 1-6 the extent to which the following statements describe the relationship you had with your mentor.**

	Very Slight Extent			Very Large Extent		
1. My mentor reduced unnecessary risks that could threaten the possibility that I would advance through my program of study.	1	2	3	4	5	6
2. My mentor helped me review assignments/tasks or meet deadlines that otherwise would have been difficult to complete.	1	2	3	4	5	6
3. My mentor offered to help me meet with other students.	1	2	3	4	5	6
4. My mentor gave me ideas for increasing contact with school administrators and faculty.	1	2	3	4	5	6
5. My mentor gave me ideas for activities to prepare me for an internship or job.	1	2	3	4	5	6
6. My mentor gave me ideas for activities that will present opportunities for me to learn new skills.	1	2	3	4	5	6
7. My mentor provided me with practical tips on how to accomplish academic objectives.	1	2	3	4	5	6
8. My mentor offered to introduce me to others who can provide me with academic opportunities.	1	2	3	4	5	6
9. My mentor helped my mentor develop interpersonal communication, leadership, or team skills through feedback.	1	2	3	4	5	6
10. My mentor helped me to develop study skills.	1	2	3	4	5	6

	Very Slight Extent				Very Large Extent	
	1	2	3	4	5	6
11. My mentor offered to recommend me to faculty, staff, employees, etc., for desired opportunities.						

APPENDIX P:  
MENTOR REPORTED PSYCHOSOCIAL SUPPORT FUNCTIONS PROVIDED

Psychosocial Support Measure  
Allen, McManus, and Russell (1999)

**Please indicate on the scale from 1-6 the extent to which the following statements describe the relationship you had with your mentor.**

	Very Slight Extent			Very Large Extent		
1. I shared my academic history with my protégé.	1	2	3	4	5	6
2. I encouraged my protégé to prepare for academic advancement.	1	2	3	4	5	6
3. I encouraged my protégé to try new ways of behaving in school.	1	2	3	4	5	6
4. I demonstrated good listening skills in our conversations.	1	2	3	4	5	6
5. I discussed my protégé's questions and concerns regarding feelings of competence.	1	2	3	4	5	6
6. I discussed my protégé's questions and concerns regarding commitment to academic advancement.	1	2	3	4	5	6
7. I discussed my protégé's questions and concerns regarding relationships with peers.	1	2	3	4	5	6
8. I discussed my protégé's questions and concerns regarding relationships with faculty.	1	2	3	4	5	6
9. I discussed my protégé's questions and concerns regarding work/family conflicts.	1	2	3	4	5	6
10. I shared personal experiences as a different perspective to my protégé's problems.	1	2	3	4	5	6
11. I encouraged my protégé to talk openly about anxiety and fears that detract from his/her school work.	1	2	3	4	5	6
12. I conveyed empathy for the concerns and feelings my protégé discussed with me.	1	2	3	4	5	6

13. I kept my protégé's feelings and doubts  
in strict confidence.      1      2      3      4      5      6

14. I conveyed feelings of respect for my protégé  
as an individual.      1      2      3      4      5      6



APPENDIX Q:  
MENTOR-REPORTED ACADEMIC CAREER DEVELOPMENT FUNCTIONS PROVIDED

Mentor-Reported Academic Career-Development Functions Provided  
Allen, McManus, and Russell (1999)

**Please indicate on the scale from 1-6 the extent to which the following statements describe the relationship you had with your protégé.**

	Very Slight Extent					Very Large Extent
1. I reduced unnecessary risks that could threaten the possibility that my protégé would advance through his/her program of study.	1	2	3	4	5	6
2. I helped my protégé review assignments/tasks or meet deadlines that otherwise would have been difficult to complete.	1	2	3	4	5	6
3. I offered to help my protégé meet other students.	1	2	3	4	5	6
4. I gave my protégé ideas for increasing contact with school administrators and faculty.	1	2	3	4	5	6
5. I gave my protégé ideas for activities to prepare him/her for an internship or job.	1	2	3	4	5	6
6. I gave my protégé ideas for activities that will present opportunities for him/her to learn new skills.	1	2	3	4	5	6
7. I provided my protégé with practical tips on how to accomplish academic objectives.	1	2	3	4	5	6
8. I offered to introduce my protégé to others who can provide him/her with academic opportunities.	1	2	3	4	5	6
9. I helped my protégé develop interpersonal, communication, leadership, or team skills through feedback.	1	2	3	4	5	6
10. I helped my protégé develop study skills.	1	2	3	4	5	6
11. I offered to recommend my protégé to faculty, staff, employees, etc., for desired opportunities.	1	2	3	4	5	6

APPENDIX R:  
EXAMPLES OF INTERACTIVITY

### Examples of Dialogue Interactivity

Mentor: What did you do when that happened?

**(Mentor to Protégé – one dialogue change)**

Protégé: Well, I didn't really know what to do.

Protégé: I guess I probably had a strange expression on my face, as he started laughing!

**(Protégé to Mentor – one dialogue change)**

Mentor: Oh no!

Mentor: What did you do then?

Mentor: he he!

**(Mentor to Protégé – one dialogue change)**

Protégé: Well....

Protégé: I burst out laughing too! I just couldn't stop myself!

Protégé: It was SOOOOO embarrassing!

Protégé: Have you ever had anything like that happen??

*Note:* Three dialogue changes occurred in this portion of the transcript.

APPENDIX S:  
EXAMPLES OF INFORMATION/FEEDBACK SEEKING BEHAVIORS

## Examples of Information/Feedback Seeking Behaviors

### *Protégé Examples*

- Do you know where I can go to get some math tutoring?
- How long do you think it will take me to graduate?
- Does that make sense to you?
- In general, how many hours a week should I study if I have 4 classes?
- It isn't necessarily clear to me – what did you get out of it?
- Any ideas on how I can make some extra money?
- Do you know if they have any counseling services or anything available for students?
- Any recommendations on how to pass Calculus?
- When is the best time to go to the library if we want to rent a laptop?

### *Mentor Examples*

- What are you thinking about majoring in?
- Did you understand what I was trying to get across?
- What is your opinion about what I just said?
- Is there anything specific that you would like to get out of this mentoring program?
- How specifically can I help you?
- I sent quite a few messages – did you read all three?
- Any thoughts about that?
- Is this helping you?
- Tell me what you got out of that.
- What is your favorite class thus far?
- Are you interested in more competitive or more nurturing programs?
- Have you tried searching on the internet for that information?
- What type of long term goals do you have?

APPENDIX T:  
EXAMPLES OF NEGATIVE SELF-DISCLOSURE BEHAVIORS

## Examples of Negative Self-Disclosure Behaviors

### *Protégé Examples*

- I'm really scared about having to take Microbiology. I'm not very good at some of these science classes.
- I really don't think that I'm smart enough to succeed.
- I think that I am failing my sociology class.
- I came from a really small town where everyone knew everyone else, and we were all the same. But here, I feel like in order to have friends I have to 'forget' myself and all the things that I believe in.
- I have found myself crying about everything lately.

### *Mentor Examples*

- Don't get too worked up over it, I failed the first time I tried also. But, the second time it went well and I passed!
- My girlfriend at the time cheated on me, and I was an emotional disaster.
- It was really hard for me the first year – it was the first time I had been away from my family, and everyone here seemed so 'weird' to me.
- When I was in that class, I felt like a complete idiot most of the time.



APPENDIX U:  
EXAMPLES OF PSYCHOSOCIAL SUPPORT BEHAVIORS

## Examples of Psychosocial Support Behaviors

- That must have been difficult, but you did it!
- Thanks for being such a great protégé!
- I wasn't nearly as dedicated as you seem to be when I was a freshman.
- You are so enthusiastic about school – that will really pay off in the long run.
- That's awesome!
- It has been really great getting to know you.
- Wow! Great accomplishment!
- I'm sure you did fine.
- Very cool idea!
- I am so happy about this opportunity to be your mentor.
- Good thinking!
- Amazing job!
- You are probably doing better than most!

APPENDIX V:  
EXAMPLES OF CAREER INFORMATION BEHAVIORS

## Examples of Career Information Behaviors

- Don't take that professor – he is so boring.
- Start thinking now about what you want to do when you graduate.
- If you need some extra money, try working at one of the places on campus.
- You really need to read up on some time management strategies.
- You should probably pull the other employee aside and ask him about it.
- I took Calculus and recommend that you take a couple other math classes first.
- If you are failing, you need to make an appointment with the professor – they are there for you.
- You need to study more than what you're doing.
- It's important that you let your boss know what's going on there.

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