WHAT CONSTITUTES A MENTORING MINDSET IN DOCTORAL STUDENTS?
A PHENOMENOLOGICAL STUDY OF GRADUATE FACULTY EXPERIENCES AT
A RESEARCH I UNIVERSITY IN THE SOUTHERN UNITED STATES

by

KELLIE RENÉ CARTER

LINDA SEARBY, CO-CHAIR
GARY PETERS, CO-CHAIR
JULIA AUSTIN
JEFFREY ENGLER
MATTHEW FIFOLT
SUSAN SPEZZINI

A DISSERTATION
Submitted to the graduate faculty of The University of Alabama at Birmingham,
In partial fulfillment of the requirements for the degree of
Doctor of Philosophy

BIRMINGHAM, ALABAMA

2012
WHAT CONSTITUTES A MENTORING MINDSET IN DOCTORAL STUDENTS?
A PHENOMENOLOGICAL STUDY OF GRADUATE FACULTY EXPERIENCES AT
A RESEARCH I UNIVERSITY IN THE SOUTHERN UNITED STATES

KEllIE RENé CARTER

EDUCATIONAL LEADERSHIP

ABSTRACT

The complex graduate student-faculty mentor relationship mentoring plays a substantial role in the academic and professional success of graduate students within the diverse settings of higher education institutions. An understanding of the mentee’s level of preparedness for the mentoring relationship, or mentoring mindset, is needed in order to better inform graduate faculty mentors and graduate students about factors that contribute to a successful mentoring relationship. Existing research tends to concentrate on valued mentor characteristics from the mentee’s perspective. However, there is little research on the mentee’s preparedness for the doctoral student-faculty member mentoring relationship in a higher education setting.

This phenomenological study explored from the mentor’s perspective what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor at a Research I University in the Southern United States. The central research question was: “What constitutes a mentoring mindset in a doctoral student who is being mentored by a graduate faculty mentor?” The purposeful sample included four females and six males from diverse academic backgrounds, different faculty ranks, and varying years of experience who had graduate faculty status, currently serve on dissertation committees, and who had received the Graduate Dean’s Award for Excellence in Mentorship. Data collection included face-to-face in-depth structured interviews. In
addition to the interviews, a reflection question was left with the participants to answer at their convenience: “After reflecting on our interview, what is your perception of the mentoring mindset of a doctoral student who is prepared to be mentored?”

A modification of the Stevick-Colaizzi-Keen method was utilized to analyze the data (Creswell, 2007; Moustakas, 1994). Interviews were transcribed verbatim, significant statements were coded, and the following major themes emerged: (a) context of the mentoring relationship, (b) basic knowledge and skills of the mentee, (c) learning orientation of the mentee, (d) personal attributes, and (e) mentoring mindset of a doctoral student. The characteristics that emerged from the research form a developmental continuum of a doctoral student’s mentoring mindset, which will help inform administrators, deans, and faculty mentors regarding best practices and training programs for mentors and mentees.

Keywords: doctoral students, higher education, mentoring, mindset
DEDICATION

For Blake. Thank you for making me smile day after day.
ACKNOWLEDGMENTS

“A lot of people have gone further than they thought they could because someone else thought they could.” – Unknown

Reaching the goal of attaining my doctoral degree has been an arduous journey. I would have never reached my destination had it not been for the guidance and support of several people. First, I am fortunate to have had a collaborative and cohesive dissertation committee. Each committee member provided useful support and feedback, which helped me to accomplish an important personal goal – complete my dissertation and graduate.

I would like to thank Dr. Linda Searby for pushing me out of my comfort zone in order to understand mentoring from multiple perspectives. Our mentoring relationship provided the foundation for my research topic.

Faculty mentors are extremely busy. Yet, all participants volunteered enthusiastically to help me with my research study. Even though I was not your doctoral student, thank you for understanding the importance of helping all students.

My friends in the Graduate School have provided daily support while I pursued my master’s and doctoral degrees. Their encouragement has meant the world to me and I would still be struggling to complete this degree if it had not been for their consistent support. Thank you for being my cheerleaders!

Heartfelt appreciation goes to my Dissertation Diva colleagues. Forming our group helped to save my sanity, especially during the past year. I will always give you credit for keeping the momentum going during this process.
Many thanks to my parents and family for instilling in me the importance of education and for never telling me my dreams were unattainable.

Finally, I must share this accomplishment with my sweet Blake, who has supported me through too many years of school. Thank you for understanding how important it was for me to attain this goal and for always reminding me to “shut up and study!”
# TABLE OF CONTENTS

ABSTRACT ...................................................................................................................................................... iii  
DEDICATION .................................................................................................................................................... v  
ACKNOWLEDGMENTS .......................................................................................................................................... vi  
LIST OF TABLES ................................................................................................................................................ xi  

## CHAPTER

1 INTRODUCTION ............................................................................................................................................ 1  
   Purpose of the Study ................................................................................................................................. 3  
   Research Questions ........................................................................................................................................ 4  
   Researcher Assumptions .............................................................................................................................. 4  
   Terms and Definitions ................................................................................................................................. 5  
   Theoretical Framework ............................................................................................................................... 6  
   Limitations of the Study ............................................................................................................................. 6  
   Significance of the Study ........................................................................................................................... 7  

2 LITERATURE REVIEW ................................................................................................................................. 9  
   History of Mentoring ................................................................................................................................... 9  
   Mentoring Processes ..................................................................................................................................... 14  
   Mentoring Graduate Students ...................................................................................................................... 16  
   Benefits of the Mentoring Relationship ....................................................................................................... 19  
   Challenges of the Mentoring Relationship ................................................................................................. 22  
   Effective Mentee Characteristics ................................................................................................................ 25  
   Concept of Mindset ...................................................................................................................................... 28  
   Theoretical Framework ............................................................................................................................... 30  
      Relational Mentoring Theory ................................................................................................................... 31  
      Adult Learning Theory ............................................................................................................................ 32  
   Summary of the Literature .......................................................................................................................... 34  

3 METHODS ..................................................................................................................................................... 38  
   Qualitative Research Approach .................................................................................................................. 38  
   The Phenomenological Approach ................................................................................................................ 40  
   Philosophical Assumptions ......................................................................................................................... 41
4 FINDINGS .............................................................................................................50

Setting/Context ......................................................................................................51
Participants .............................................................................................................53
Themes ...................................................................................................................59
  Context of the mentoring relationship .........................................................60
  Structure ...........................................................................................................60
  Process ..............................................................................................................62
  Results ..............................................................................................................65
Basic knowledge and skills of the mentee ...................................................66
  Preparatory abilities and research experience ....................................67
Communication skills .....................................................................................68
Learning orientation of the mentee ..............................................................70
  Demonstrating critical thinking .................................................................70
  Being open to feedback and others’ perspectives ..................................71
Personal attributes ........................................................................................73
  Interpersonal skills and compatible personalities ..................................74
  Risk taking and self-confidence ...............................................................76
  Motivation .....................................................................................................78
Mentoring mindset of a doctoral student ...................................................81
  Open to a learning relationship ...............................................................83
  Capability to succeed ...............................................................................84
Interpretation .....................................................................................................85
  Textural description ...................................................................................86
  Structural description ...............................................................................87
  The essence of the doctoral student’s mentoring mindset ..................88
Summary ...........................................................................................................89

5 DISCUSSION ........................................................................................................90

Major findings .....................................................................................................92
  Basic knowledge and skills of the mentee ...............................................92
  Learning orientation of the mentee ..........................................................94
  Personal attributes .....................................................................................96
  Mentoring mindset of a doctoral student .............................................100
Summary themes ..........................................................................................102
Research questions answered .......................................................................103
Implications ......................................................................................................111
Overall significance .......................................................................................113
Recommendations for future research .................................................................115
Limitations ...........................................................................................................117
Summary ..............................................................................................................118

LIST OF REFERENCES .................................................................................................120

APPENDICES

A GRADUATE DEAN’S AWARD FOR EXCELLENCE IN MENTORSHIP....130
B LITERATURE MAP ...........................................................................................133
C PARTICIPANT INVITATION EMAIL .............................................................135
D PARTICIPANT INFORMATION SHEET ........................................................137
E INTERVIEW PROTOCOLS ...............................................................................140
F SIGNIFICANT STATEMENTS .........................................................................145
G ANSWERS TO REFLECTION QUESTION .....................................................160
H TRANSCRIBED INTERVIEW ..........................................................................163
I INSTITUTIONAL REVIEW BOARD APPROVAL ........................................172
# LIST OF TABLES

Table

1. Descriptions of Emergent Themes and Subthemes from Interviews ........................................82
2. Emergent Themes from Mentoring Mindset of a Doctoral Student Descriptions ...............85
3. Doctoral Mentee Readiness Indicators ..................................................................................107
4. Characteristics of a Doctoral Student’s Mentoring Mindset from the Mentor’s Perspective ........................................................................................................................................109
Introduction

The concept of mentoring or mentor has been around for centuries (Zachary, 2005) and usually denotes an older, wiser individual who helps a less-experienced individual in career development (Ragins & Kram, 2007). In her seminal research of mentoring in the workplace, Kram (1985) found that the mentoring relationship is a developmental relationship and that mentors provide career benefits as well as psychosocial benefits to their mentees. Although mentoring within a professional organization can provide meaningful benefits to the mentee (Kram, 1983), mentoring can also play a substantial role in the success of graduate students within the diverse settings of higher education institutions (Pamuk & Thompson, 2008; Williams-Nickelson, 2009).

In a higher education setting, the graduate student-faculty mentor relationship takes on a more complex and dynamic role when compared with a traditional business setting (Hall & Burns, 2009; Lyons & Scroggins, 1990; Sambrook, Stewart, & Roberts, 2008). This complexity suggests that the mentoring relationship is a developmental process that augments the mentee’s academic and psychosocial development (Kram, 1985; Pitney & Ehlerst, 2004; Rose, 2005). For example, Lyons and Scroggins found that doctoral students who were in mentoring relationships with faculty members reported more positive graduate school experiences and that a mentor “is absolutely essential for success in graduate school” (p. 279). Inversely, for those graduate students who have an overall negative academic experience, the lack of a supportive mentor may be a contributing factor (Mullen, 2007; Nyquist & Woodford, 2000). Further research also
suggests that an effective mentoring relationship between graduate students and faculty is
the most important factor for degree completion (Creighton, Creighton, & Parks, 2010). Because mentoring is an important part of graduate student’s academic and professional success (Pitney & Ehlerst), an understanding of the mentee’s level of preparedness for the mentoring relationship, or mentoring mindset, is needed in order to better inform graduate faculty mentors and graduate students about factors that contribute to a successful mentoring relationship.

Previously, researchers have demonstrated that graduate students believe that effective mentoring from a faculty member has positive benefits for both mentor and mentee (Pamuk & Thompson, 2008), helps them develop as professional researchers (Hall & Burns, 2009), and that mentoring plays a critical role in degree completion (Bell-Ellison & Dedrick, 2008). The existing research tends to concentrate on characteristics of “ideal” mentors from a mentee perspective (Rose, 2003). However, there is little research on mentees taking an active role in mentoring relationships (Zachary, 2009) or on the mentee’s preparedness for the doctoral student-faculty member mentoring relationship in a higher education setting.

Successful mentoring of doctoral students provides favorable benefits for the mentee (Lyons & Scroggins, 1990), which, in turn, will offer positive benefits for the mentor (Lechuga, 2011), higher education institution, and research community. Faculty members who become supportive mentors provide a supportive foundation to graduate students who, without such support, may not be successful in completing an advanced degree (Mullen, 2006). According to Dweck (2008), a mindset is a person’s beliefs in his or her personal qualities. In her study of future principles, Searby (2008) used the term
mentoring mindset to describe the knowledge, skills, and dispositions a protégé needs in order to be prepared for a mentoring relationship. By exploring the doctoral mentee’s mentoring mindset from the perspective of the faculty mentor, we can more fully understand how to prepare doctoral students for the experience and develop a mentoring model of menteeship to better inform graduate mentors in any academic discipline. This, in turn, will provide guidance for possible structured mentor and mentee training to be created and implemented.

Purpose of the Study

The purpose of this qualitative study was to describe and explore from the mentor’s perspective what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor at a Research I University in the Southern United States. The faculty members were graduate mentors from various academic disciplines that award doctoral degrees, were currently serving on dissertation committees during data collection, and had received the *Graduate Dean’s Award for Excellence in Mentorship* (see Appendix A). Throughout the study, mentoring was defined as the following: The guidance and support provided by a faculty mentor in an official capacity to help the doctoral student achieve the technical and intellectual skills to complete the dissertation as well as develop psychosocial and career aptitudes in order to achieve professional self-reliance (King, 2003; Kram, 1985).
Research Questions

This research study was guided by the following central research question: “What constitutes a mentoring mindset in a doctoral student who is being mentored by a graduate faculty mentor?” Research subquestions that supported the study included the following:

1. How do faculty members describe the process of mentoring doctoral students?
2. How does a faculty mentor describe the characteristics of a doctoral student who appears to be poised to benefit from a mentoring relationship?
3. How does a faculty mentor describe the characteristics of a mentee who does not seem to be poised to benefit from the mentoring relationship?
4. How does a faculty mentor describe the mentoring mindset of a doctoral student who is ready to be mentored?

Researcher Assumptions

Within the context of this study, the following assumptions were considered:

1. The participants were faculty members with graduate faculty status and were actively mentoring graduate students during data collection.
2. The participants had received the Graduate Dean’s Award for Excellence in Mentorship.
3. The participants provided honest responses to interview questions and the reflection question.
4. The researcher bracketed biases by “setting aside prejudgments and opening the research interview with an unbiased, receptive presence” (Moustakas, 1994, p. 180) in order to allow the participants’ meanings to emerge.

Terms and Definitions

Several terms and definitions were used throughout the research study, which include the following:

1. **Graduate Faculty Member:** a faculty member who has been granted graduate faculty status and currently chairs and serves on doctoral dissertation committees.

2. **Doctoral Mentoring:** The guidance and support provided by a faculty mentor in an official capacity to help the doctoral student achieve the technical and intellectual skills to complete the dissertation as well as develop psychosocial and career aptitudes in order to achieve professional self reliance (King, 2003; Kram, 1985).

3. **Doctoral Mentee:** a doctoral student, sometimes referred to as the protégé, who is working with a graduate faculty mentor to achieve candidacy and complete the dissertation.

4. **Mindset:** a person’s beliefs in his or her personal qualities (Dweck, 2008):
   a. A fixed mindset is a belief that an individual’s basic qualities are unchangeable.
   b. A growth mindset is a belief that an individual’s basic qualities can be changed and improved through effort and experience.
5. **Doctoral Student**: a degree-seeking graduate student who is actively enrolled in a graduate program.

6. **Phenomenology**: the “systematic attempt to uncover and describe the structures, the internal meaning structures of lived experience. A universal essence may only be intuited or grasped through a study of the particulars or instances as they are encountered in lived experience” (van Manen, 1990, p. 10).

**Theoretical Framework**

The theoretical framework is an integral part of a qualitative approach to research, including the phenomenology tradition, which helps to inform the study and guide the research process, analysis and discussion (Creswell, 2007). Because learning and relating to one another are important parts of mentoring, the theories that were foundational to the research study were relational mentoring theory and adult learning theory. These two theories provided a lens through which to view and understand the doctoral student’s mentoring mindset.

**Limitations of the Study**

One possible limitation was that the phenomenon was being viewed from the mentor’s perspective only and the faculty members who participated in this study may have only had good experiences, or predominantly good experiences, with doctoral students, which may have contributed to a slight lack of understanding of the students being truly prepared for the mentoring relationship. Another limitation is that the 10 faculty members were chosen from a variety of academic disciplines, but not all
disciplines from the research site were represented, which would have offered a more complete set of data and thereby depth to the analysis. Additionally, because qualitative inquiry is emergent and open to interpretation, the research findings cannot be generalized to different populations of faculty mentors at other institutions.

Finally, contextual influences may have varied among the different academic programs represented. For example, in some academic programs, the mentor is usually, but not always, the graduate student’s dissertation committee chair, while in others, the mentor is not allowed to be the student’s committee chair. Some programs may assign the mentor to the student, dependent upon the student’s research interests, while in others, the student chooses the mentor from the faculty members within the student’s department. Further, some programs may have had formal mentoring guidelines that must meet progressive benchmarks at the departmental level, while others may have allowed more freedom in reaching major goals in the student’s progression through the program.

Significance of the Study

There is a large amount of research on what makes an effective mentor, but minimal research on what makes an effective mentee. Both the mentor and mentee contribute to the success (or failure) of the mentoring relationship, but what does the mentee bring to the relationship that helps make it beneficial and productive? Because the relationship between a faculty mentor and doctoral student (mentee) is critical if the student is to move successfully through the dissertation research phase toward the completion of the doctoral degree, this research study added to the existing research by providing more insight into the mindset needed in order for the student to be prepared to
be effectively mentored. By determining what constitutes a mentoring mindset in a
doctoral mentee, we will be able to put emphasis on mentee training for doctoral students.
Literature Review

The literature review has two important functions (Maxwell, 2005). First, it shows how a proposed research study is positioned within and relates to existing research on the topic (Creswell, 2007) and how it contributes to our understanding of the topic (Maxwell). Second, it provides an explanation of the theoretical framework that informs and helps to guide the study. A thematic review was chosen for this study, which “organizes the core themes presented in the studies and presents their findings within the core themes” (Moustakas, 1994, p. 112).

The overarching question of this phenomenological study was “What constitutes a mentoring mindset in a doctoral student who is being mentored by a graduate faculty mentor?” Supportive relevant literature provided a foundation to help ground the study and answer the research question. After selecting the relevant literature, it was divided into eight core themes: (a) history of mentoring; (b) mentoring processes; (c) mentoring graduate students; (d) benefits of the mentoring relationship; (e) challenges of the mentoring relationship; (f) effective mentee characteristics; (g) concept of mindset; and (h) theoretical framework. The situational context of these themes was developed into a visual model in the form of a literature map (see Appendix B).

History of Mentoring

This section provides the background of core concepts and definitions, along with complexities that have emerged over the past 25 years. The concept of mentoring or
mentor has been around for centuries (Zachary, 2005) and usually denotes a dyadic, traditional relationship of an older, wiser individual who helps a less-experienced individual in career development and psychosocial functions (Higgins & Kram, 2001; Noe, Greenberger, & Wang, 2002; Ragins & Kram, 2007). While most researchers attribute the origins of the term mentor to Greek mythology where in Homer’s Odyssey, Mentor was a trusted counselor to the King’s son, Telemachus, Roberts (2000) attributed our present day understanding of the term mentor to Fenelon’s Les Adventures de Telemaque. Published in 1699, Fenelon’s story is based on The Odyssey, but Roberts claimed that Homer’s Mentor is a lackluster version of Fenelon’s Mentor, who seems to capture the essence of our present day definition of mentor.

When considering this present day definition, one of the more common conceptions of mentoring is what Mullen (2006) refers to as traditional mentoring: “relationships and systems focused on transmitting skills or knowledge through a top-down means, serving to preserve existing cultural norms” (p. xix). This hierarchical model may be what is traditionally thought of as mentoring, but fails to take into consideration present day contextual influences and nontraditional types of mentoring relationships. As organizations continue to evolve, mentoring relationships must also evolve in order to keep pace.

As the concept of mentoring has developed over time, a concise, all-encompassing definition of mentoring has remained elusive (Bozeman & Feeney, 2007), including a definition that focuses on mentoring in graduate education (Hall & Burns, 2009), which may lend itself to the complex nature of the concept (Roberts, 2000). In fact, there are several definitions of mentor found in the literature. In her seminal research
of mentoring at work, Kram (1985) described the mentoring relationship as a developmental relationship in which mentors provide career benefits as well as psychosocial benefits to their mentees. She provides the following definition:

> Derived from Greek mythology, the name implies a relationship between a young adult and an older, more experienced adult that helps the younger individual learn to navigate in the adult world or world of work. A mentor supports, guides, and counsels the young adult as he or she accomplishes this important task. (p. 2)

Zachary (2009) stated that a mentor “acts as a guide who helps us define and understand our own goals and pursue them successfully” (p. 1). Employing an inductive, phenomenological approach to the concept of mentoring, Roberts (2000) offered the following definition of mentoring: “A formalized process whereby a more knowledgeable and experienced person actuates a supportive role of overseeing and encouraging reflection and learning within a less experienced and knowledgeable person, so as to facilitate that person’s career and personal development” (p. 162).

To address the complex nature of mentoring, Bozeman and Feeney (2007) advanced this definition of mentoring:

> Mentoring: a process for the informal transmission of knowledge, social capital, and psychosocial support perceived by the recipient as relevant to work, career, or professional development; mentoring entails informal communication, usually face-to-face and during a sustained period of time, between a person who is perceived to have greater relevant knowledge, wisdom, or experience (the mentor) and a person who is perceived to have less (the protégé). (p. 731)

In their research on the graduate student-faculty mentor relationship, Nettles and Millett (2006) stated that a mentor is “a faculty person who establishes a working relationship with a student and shepherds her or him through the doctoral process to completion” (p. 98). This basic definition fails to consider the complexities of the graduate-level mentoring relationship. King (2003) offered a more developed definition
that acknowledged the importance of intellectual development for the graduate student mentee: “Rather than being concerned solely with the student’s completing the dissertation or developing technical competence, the mentor is concerned with promoting a broader range of psychosocial, intellectual, and professional development” (p. 15).

Most of these definitions refer to the importance of advancing the mentee’s career and psychosocial development. Kram (1983) referred to these as mentoring functions, which are essential in order to enhance both the mentor’s and mentee’s individual development. It is worth noting that King (2003) considered intellectual development a third function in a graduate-level mentoring relationship. Taking into consideration the complexities and multidimensional nature of individual mentoring relationships, whether in a professional or graduate-level setting, subjective perceptions of the mentoring relationship, and contextual influences, especially in graduate education, may explain why an overarching concept/definition of mentoring is elusive.

Another reason for the elusive nature of an overarching concept is that mentoring has evolved from its traditional, top-down model into different types that are more situational. For example, peer mentoring “is a helping relationship in which two individuals of similar age and/or experience come together, either informally or through formal mentoring schemes, in the pursuit of fulfilling some combination of functions that are career-related…and psychosocial” (Terrion & Leonard, 2007, p. 150). This type of mentoring relationship easily translates into a higher education setting when considering doctoral students who mentor each other through the graduate program, dissertation process, and professional networking. Other types of mentoring include targeted mentoring, which is aimed at a particular population (McAllister, Ahmedani, Harold, &
Cramer, 2009); cogenerative mentoring, which is “radically democratic communication and collaboration that acknowledges and accounts for differences in experience and expertise” (Harris, Freeman, & Aerni, 2009, p. 24); and collaborative mentoring, which can take the form of varying models (Spezzini, Austin, Abbott, & Littleton, 2009), but is basically “an opportunity for professionals to become directly involved in each other’s learning and to provide feedback while developing along an agreed path” (Mullen, 2000, pp. 4-5), to name a few.

As the mentoring relationship has developed and expanded to include varying types and levels of mentoring, the concept of reciprocity, or exchange of mutual benefits between the mentor and mentee has been a shift in the perception of the mentoring relationship, which highlights benefits for mentors, mentees, and organizations alike (Ensher & Murphy, 2005). During their study on mentoring relationships, the researchers suggested the concept of power mentoring, which consisted of a broad network of mentors instead of a traditional model. Additionally, they found that power mentoring provided both mentors and mentees “mutually beneficial outcomes related to their personal career growth and development” (p. 3).

It is important to understand different concepts of mentoring in order to more fully comprehend complexities and subtle nuances involved in the mentoring relationship. However, for the purposes of this research study, the concept of mentoring focused on the mentoring relationship between a doctoral student and a faculty member. Although the varying academic disciplines may have contextual and departmental influences on the mentoring relationship, the graduate mentoring relationship at the doctoral level of academe involves the following: In the official capacity as a faculty
mentor, mentoring is providing guidance and support to help the doctoral student achieve the technical and intellectual skills to complete the dissertation as well as develop psychosocial and career aptitudes in order to achieve professional self reliance (King, 2003; Kram, 1985).

In sum, although a concise, all-encompassing definition of mentoring has remained elusive (Bozeman & Feeney, 2007), most of the definitions for mentor or mentoring refer to the importance of advancing the mentee’s career and psychosocial development. Kram (1983) referred to these as mentoring functions, which are essential in order to enhance both the mentor’s and mentee’s individual development. It is worth noting that King (2003) considered intellectual development a third function in a graduate-level mentoring relationship.

**Mentoring Processes**

The complex nature of the mentoring relationship may have inherent issues and challenges that need to be addressed by both the mentor and mentee (Lyons & Scroggins, 1990). Some of these issues may be classified as positive, whereas others may have a negative impact on the mentor and graduate student (Bozeman & Fenney, 2007). An important issue for both mentor and mentee is to recognize that the mentoring relationship goes through stages or phases and involves a process, often complex.

Kram (1983) stated that the mentoring relationship proceeds through four phases: initiation (the beginning of the relationship), cultivation (career and psychosocial functions are developed and valued), separation (changes in the relationship), and redefinition (evolving or ending of the relationship). Roberts (2000) referred to this as the
mentoring process, which included establishing rapport, direction setting, progress making, and moving on. Similarly, Mullen (2006) suggested that creating a mentoring map in graduate school, which includes “the processes of orientation, acclimation, adjustment, and the realities of survival, challenge, and growth” (p. 5) will provide a foundation of socialization for the student. Regarding academic settings, O’Neil’s model of student-faculty interaction includes: “a) making a critical decision and entering a relationship, b) building mutual trust, c) taking risks, d) teaching skills, e) learning professional standards, and f) dissolving or changing the relationship” (Lentz & Allen, 2010, p. 160). All of these models are similar in that they seem to move along a continuum, which makes the time spent during each phase of the mentoring relationship relative.

Bouquillon, Sosik, and Lee (2005) explored how Kram’s (1983) mentoring phases (initiation, cultivation, separation, and redefinition) affect the functions and dynamics of the mentoring relationship. The researchers discovered that levels of trust as well as identification with mentors that the mentees experienced, were similar across the mentoring phases instead of changing, and that the highest levels of psychosocial support were reported in the redefinition phase and the lowest levels of psychosocial support, role modeling and career development were reported in the separation phase. Mentoring processes, such as forming, structuring and maintaining the mentoring relationship, as well as mentoring functions, such as establishing the roles and responsibilities of the mentor and mentee, are interrelated, and they tend to help guide and shape each other (Williams-Nickelson, 2009). Understanding the phases or processes of the mentoring
relationship could help mentees and mentors understand what makes mentoring relationships effective.

Beginning a mentoring relationship may seem like a daunting task. Pitney and Ehlerst (2004) found that students believed that mentors should be accessible and approachable and that the student should initiate the mentoring relationship. However, mentees may not know or assume this. Moreover, establishing trust, a psychosocial function, is paramount in a mentoring relationship, as is accommodating student individualized learning and professional development.

In sum, effective mentoring relationships yield benefits for both the mentor and mentee (Ehrich, Hansford, & Tennet, 2004). Although progressing through the mentoring phases (Kram, 1983) or processes (Roberts, 2000; Lentz & Allen, 2010) in an effective way is important, understanding the negative outcomes (Bozeman & Feeney, 2007) in mentoring relationships is equally important. Mullen (2006) suggested that mentoring was not a one-size-fits all, stating, “No one mentoring strategy is a panacea for student engagement, quality of work, and program success, but each is nonetheless a critical piece of the puzzle” (p. 58).

**Mentoring Graduate Students**

This section focuses on the mentor-doctoral student mentoring relationship in higher education. Mentoring in higher education is “a process of mutual learning and scholastic engagement in graduate studies” (Mullen, Fish, & Hutinger, 2010, p. 179). Although there are similarities to mentoring in business organizations, the mentoring relationship between graduate students and faculty members places emphasis on
progressing through a degree-granting program. These relationships may vary greatly because “graduate school mentoring experiences are highly idiosyncratic since guidelines do not typically exist for mentoring relationships and faculty have substantial latitude in how they interact with their students” (Eby, Rhodes, & Allen, 2010, p. 16). According to Johnson (2001), mentoring relationships in graduate education are “personal relationships in which a more experienced faculty member acts as a guide, role model, sponsor and advocate of a less experienced student (protégé)” (p. 2).

Although there is abundant research regarding the effect graduate-level mentoring has on successful completion of the degree program (Bell-Ellison & Dedrick, 2008; Hall & Burns, 2009; Lyons & Scroggins, 1990; Pamuk & Thompson, 2008; Pitney & Ehlerst, 2004; Sambrook et al., 2008; Williams-Nickelson, 2009), Johnson (2001) stated that there is little research regarding the facilitation of these mentoring relationships. To address these issues, he suggested creating a “culture of mentoring,” which is characterized by the following:

Faculty with intrinsic interest in and skills relevant to mentoring; faculty who prize long-term, developmental, helping relationships with students; faculty leaders who work to ensure that each admitted student is mentored; and department leadership that encourages and rewards effective faculty mentors (p. 3).

Johnson (2001) added that creating buy-in for a mentoring culture from faculty is essential.

A mentoring culture in higher education would be conducive to the doctoral mentee-faculty mentor relationship. However, the relationship itself is not between two equals. Goodman (2006) explained that this academic interpersonal relationship, is a tension between autonomy and guidance and “takes on additional meanings in this
academic relationship due to its asymmetrical nature and because it is a role-related
tension as well as an interpersonal one” (p. 206). Even though mentoring at the graduate
level is taken for granted by the nature of the responsibilities of the major professor or
dissertation chair, it is still a vital part of the doctoral student’s academic experience for
which the faculty mentor provides advising, “coaching, teaching, instructing, scaffolding,
counseling, and consulting” (Mullen, 2006, p. 150).

An important part of the doctoral student and faculty member mentoring
relationship is how personalities affect the relationship and it is one aspect that Mullen
(2010) suggested the mentee and mentor should “prepare well for their respective roles”
(p. 121). Moreover, Johnson and Ridley (2004) stated that mentors and mentees must
carefully consider if they are well matched in order for the mentoring relationship to
thrive. The researchers include the following traits that both the mentor and mentee
should consider when contemplating entering into a mentoring relationship:

Personality traits (e.g., sense of humor, warmth, humility, extraversion), social
skills, communication style, writing ability, personal values (e.g., importance of
family versus work, religious commitment), short- and long-term career goals,
and desired career trajectory. (pp. 74-75)

Johnson and Ridley (2004) also include a need for the mentor and mentee to share a
similar “work ethic, need for achievement, and ‘driveness’” (p. 75).

In sum, mentoring in higher education is “a process of mutual learning and
scholastic engagement in graduate studies” (Mullen et al., 2010, p. 179). An important
part of the doctoral student and faculty member mentoring relationship is how
personalities affect the relationship, which also includes a need for the mentor and
mentee to share similar work ethic and drive (Johnson and Ridley, 2004).
Benefits of the Mentoring Relationship

The following section provides a general overview of career/professional and psychosocial benefits for the mentee. Effective mentoring fosters graduate student success (Lechuga, 2011) and may help to provide doctoral students with the support needed to complete graduate coursework as well as the dissertation process while having a more satisfying graduate school experience than those students who do not have a mentor (Lyons & Scroggins, 1990). Although the graduate mentoring relationship may at first glance seem fairly simple, it actually involves complex individuals going through a complex and dynamic process (Ehrich et al., 2004).

Lyons and Scroggins (1990) stated that the academic mentor serves three primary functions: (a) imparting the scientific know-how and technical skills consistent with the student’s research field; (b) helping the student acclimatize to the ethics, rules, and values of the research field; and (c) validating the student’s achievements, which will help reinforce confidence. During the course or phases of the mentoring relationship, mentors provide several benefits for their mentee (Ehrich et al., 2004). Kram’s (1983) mentoring functions, which include psychosocial and career benefits, translate into the academic organization as also being beneficial to graduate students (Johnson, 2010). For example, career benefits include career advancement, job-related satisfaction, and a tendency to mentor others (Roche, 1979). Psychosocial examples include friendship, encouragement, advice, and feedback (Kram, 1985). At a graduate education-level, mentees’ research productivity benefits positively from their mentor’s collaborative mentoring, and mentees’ research self-efficacy is positively influenced by psychosocial mentoring (Paglis, Green, & Bauer, 2006). Bair, Haworth, and Sandfort (2004) noted that doctoral
faculty were perceived by mentees as contributing to the academic, professional, and social needs of their students through mentoring activities, teaching, and research.

Mentoring is a reciprocal developmental process (Ehrich et al., 2004); therefore, the faculty mentor benefits as well. Mentor benefits include bolstering a positive reputation by guiding a promising mentee and creating new networking opportunities through the mentee (Lyons & Scroggins, 1990). Similarly, Busch (1985) stated that the mentor benefits included the following: (a) achieving a sense of satisfaction at watching the mentee develop personally and professionally, (b) being able to keep up on trends in the field, and (c) enjoying the developmental qualities of the mentoring relationship, such as collegiality. However, Shore, Toyokawa, and Anderson (2008) found that mentor expectations and levels of reciprocity should be taken into consideration so that an ethical line is not crossed.

In their research on power mentoring, Ensher and Murphy (2005) categorized mentee and mentor benefits as providing either career support or personal/emotional support. Mentee benefits included career support such as career and job success, access to resources, and exposure and visibility as well as personal/emotional support such as interpersonal growth, advocacy, and support and confirmation. Mentor benefits included career support such as career satisfaction, recognition as a leader, and “recognition as a developer of others” (p. 99) as well as personal/emotional support such as rejuvenation, interpersonal skill development, and excitement and inspiration.

Although the positive outcomes of mentoring are an important result of the mentoring relationship for the mentee, it is equally important, specifically from a leadership/administrative stance, to understand the value placed on mentoring programs
(Kram, 1983). By examining the need for rigorous empirical research into generally accepted benefits of mentoring, Betts and Pepe (2006) studied the relevant outcomes of mentoring interactions and found that success, awareness, and advancement were perceived to be positive benefits of mentoring relationships, while attitudes and behavior were deemed to be negative.

Koro-Ljungberg and Hayes (2006) examined how mentoring relationships can affect a graduate student’s forming of relational self in order to address the possible insufficient preparation and unrealistic expectations of graduate students at research-based universities. The researchers discovered that because each student had individual needs, unique to them, each perceived the characteristics of the mentoring relationship in a different way. The students also perceived that they received some positive benefits of the mentoring relationship, including professional development, through research collaboration, writing productivity, and critical thinking skills.

Researchers suggest that mentoring not only helps students to succeed academically and psychosocially, but also professionally (Mullen, 2006). Spitzmüller et al. (2008) found that the students’ views of psychosocial mentoring functions are positively related to the student’s pursuit of employment at the mentor’s organization. Career mentoring functions were positively related to the student/mentee attaining employment at the mentor’s organization.

In sum, the graduate mentoring relationship is complex and dynamic (Ehrich et al., 2004), and provides support for a graduate student’s satisfaction with the graduate school experience (Lyons & Scroggins, 1990). Because of the reciprocal nature of the
mentoring relationship (Ehrich et al.), both mentee and mentor reap benefits from the relationship (Kram, 1985; Johnson, 2010; Paglis et al., 2006).

**Challenges of the Mentoring Relationship**

Although it is important to understand the concept of effective mentoring, it is equally important to understand the negative side of mentoring. One challenge that must be acknowledged is context of the mentoring relationship at the graduate level. A major difference between mentoring in a business environment and mentoring in higher education is that the graduate-level mentor assesses and helps the academic progress of the mentee (Conway, 1998). This may hinder the mentoring relationship because “the consequence of bringing into the relationship the element of assessment immediately changes the dynamics and can lead to a good relationship, but possibly not one in which there is complete openness by the participants” (p. 101).

Dysfunctional mentoring relationships may lead to negative mentoring outcomes (Bozeman & Feeney, 2007). Having a frank discussion regarding relationship needs and expectations will help to ensure satisfaction for both participants of the mentoring relationship (Zachary, 2009). Johnson and Ridley (2004) stated that in mentoring relationships that end prematurely, “misunderstanding and mismatched assumptions underlie mentorship dysfunction” (p. 77). Assumptions about the mentoring relationship for both the mentor’s role and mentee’s role “determine how and what we perceive and are a result of our past experience” (p. 52). These assumptions may include the following: “prior life experiences, fears, cultural interpretations, myths, and core values” (Searby, 2009, p. 10). Students and faculty members may have differing perceptions of each
other’s roles and responsibilities within the relationship (Colvin & Ashman, 2010).
Moreover, Harris et al. (2009) stated that unexamined assumptions “fail to question
whether both mentor and [mentee] are ready, willing and committed to similar goals,
types and levels of engagement with each other, and whether the benefits of that
engagement are similarly perceived” (p. 37). Therefore, exploring each other’s
assumptions regarding the mentoring relationship is paramount for establishing and
maintaining a functional and effective mentoring relationship. Additionally, those
mentor-mentee dyads that successfully move through the mentoring phases may have
more positive/effective mentoring relationships.

Challenges will arise during the course of all mentoring relationships. However,
there are challenges that may prove to be difficult to overcome, leading to dysfunctional
dynamics (Kram, 1983) and negative mentoring outcomes (Bozeman & Feeney, 2007).
Some of these dysfunctional dynamics include negativity, sabotage, difficulty (Scandura,
1998) as well as controlling behavior, poor mentor-mentee fit, and estrangement (Eby &
Allen, 2002; Eby, Butts, Lockwood, & Simon, 2004). Time constraints and lack of
understanding the mentoring process may also cause dysfunction (Long, 1997).

Research also points to challenges regarding demographic issues in mentoring
relationships (Lyons & Scroggins, 1990). Relational problems in academic settings
between cross-gender dyads in the past may have been caused by lack of females in
upper-level positions in a male-dominated setting (Johnson, 2010). However, research
regarding gender “largely disconfirms the hypothesized differences in outcomes for men
that there was not much difference between what women and men value in mentoring
functions; however, women valued acceptance and confirmation, along with championing behaviors as slightly more important mentoring functions than men did.

Time constraints, especially in graduate-level mentoring, pose unique challenges, in that university limitations such as time to degree and mentors who mentor multiple students may have a negative impact on the mentoring relationship. Cohen (1999) observed that because the mentoring relationship (mentor-mentee interaction) may not always be able to progress consistently, then the mentor and mentee should “attempt to plan and conduct mentoring activities that ensure they achieve the maximum learning possible within the time available” (p. 7).

There will be some differences between all mentors and mentees, but when differences are particularly large, Phillips-Jones (2003) referred to these relationships as “cross-difference mentoring” (p. 74). The obstacles the cross-difference mentoring relationship face include negative stereotypes, difficulty identifying with each other, scrutiny by others, and resentment by peers. Other challenges that may affect the mentoring relationship that could also be considered as cross-difference mentoring are cross-gender and cross-cultural relationships. Both types of mentoring relationships require open communication between mentor and mentee about differences and scrutiny regarding stereotypical assumptions (Johnson & Ridley, 2004). Moreover, cultural assumptions may “threaten the viability of the relationship” (Zachary, 2005, p. 209). Best practices to consider for these aforementioned relationships are the following: become culturally self-aware, know your biases and prejudices, discuss differences, look for commonalities, work on trust, learn as much as possible about each other, and do not treat the relationship as fragile (Phillips-Jones, 2003).
In sum, dysfunctional dynamics (Kram, 1983) may lead to negative outcomes (Bozeman & Feeney, 2007), but focusing on the qualities and contextual characteristics of mentoring and not making blanket assumptions that all mentoring relationships are the same (Johnson, 2010) should help mentee-mentor dyads to progress through the mentoring phases. Further, effective mentee characteristics may help to facilitate the mentoring relationship.

**Effective Mentee Characteristics**

This section delves into a mentee’s readiness, preparedness, and openness—characteristics which have been found to be desirable in a mentee. The mentoring relationship is complex on all levels; therefore, clear and effective communication and honest feedback are characteristics valued in graduate mentors by graduate students (Rose, 2005). However, the positive mentee characteristics are an important part of the mentoring relationship as well. Most of the research on mentoring in a professional setting has been published over the last 25 years (Wanberg, Welsh, & Hezlett, 2003). This research has brought to light certain mentee characteristics that help to make the mentoring relationship effective. In a research study conducted by Edwards and Gordon (2006), the researchers found that the following mentee characteristics are desirable in order to help enhance the mentoring relationship:

- Be open to accepting guidance from the mentor, and trust the mentoring relationship and the mentor; have a personal integrity in the relationship; make sure that the personalities of the mentor and mentee match, get to know the mentor on a personal basis, and establish a mutual understanding about the relationship at the outset; engage academically with the mentor, which includes participating fully in the program and engaging in intellectual dialogue; and be proactive in seeking out opportunities to communicate with the mentor, and use effective communication strategies. (p. 15)
First and foremost, mentoring is a relational process in which both the mentor and the mentee must understand the “value of relating to each other” (Kram, 1983, p. 615). In relating to each other, Kram identified certain positive mentee characteristics, such as having potential, being coachable and being pleasant to work with. Similarly, Caruso’s (1990, as cited in Roberts, 2000) list of mentee characteristics highlights the mentee’s potential: lacking experience and knowledge, eager to learn professional skills that will provide independence, demonstrating initiative, being able to work/relate with the mentor while problem solving, and working and functioning independently with mentor confirmation. Lentz and Allen (2010) also stated that initiative, intelligence, emotional stability, career motivation and self-efficacy, and openness to experience are key mentee characteristics related to the mentee’s readiness to be mentored.

Although it is important for the mentee to be open to the mentoring relationship, it is equally important for the mentor. Harris et al. (2009) suggested that both the mentor and mentee should be “ready, willing and committed to similar goals, types and levels of engagement with each other” and should also address if the benefits of the relationship are “similarly perceived” (p. 37).

A key piece of research, which may also add to the development and growth of the mentoring relationship, is what Chandler (2006) referred to as a mentee’s relational savvy. Relational savvy is “protégé adeptness at initiating and cultivating developmental relationships” (p. 1). In her qualitative dissertation with a quantitative component, Chandler (2006) employed a grounded theory inductive approach in order to identify the characteristics and behaviors of relationally savvy individuals through participants’ stories about protégés relational approaches. She found that relational savvy is comprised
of the following seven dimensions: “developmental proactivity; managing interactions; developer awareness; mutuality orientation; relational attitudes; feedback orientation; and social skills” (p. 87). Further, relationally savvy individuals also have four characteristics in common:

they are highly proactive in seeking out other’s counsel, and they do so broadly; they manage interactions with potential and current developers with care; they hold attitudes conducive to reaching out to others for learning; and they have outstanding social skills. (Chandler, Hall, & Kram, 2012, p. 49)

Mentoring characteristics of doctoral students are similar to the aforementioned characteristics (Mullen, 2006), in that the doctoral mentee should be eager and “exhibit professional attitudes and leadership potential” (p. 33). Additionally, a doctoral student who is willing to effectively utilize formal and informal resources is likely to complete the graduate degree program.

In sum, in relating to each other, Kram (1983) identified certain positive mentee characteristics, such as having potential, being coachable and being pleasant to work with. Edwards and Gordon (2006) found that there were certain desirable mentee characteristics that may help to enhance the mentoring relationship, including accepting mentor’s guidance, engaging academically with the mentor, and being “proactive in seeking out opportunities to communicate with the mentor”, to name a few (p. 15). Lentz and Allen (2010) also stated that initiative, intelligence, emotional stability, career motivation and self-efficacy, and openness to experience all key mentee characteristics related to the mentee’s readiness to be mentored. Additionally, Chandler’s (2006) relational savvy is “protégé adeptness at initiating and cultivating developmental relationships” (p. 1) may add to the development and growth of the mentoring relationship.
Concept of Mindset

The concept of mindset may be found in dictionaries and psychology literature. Merriam-Webster (n.d.) online dictionary defines mindset at “a mental attitude or inclination” (n.p.). The American Heritage Dictionary of the English Language (n.d.) defines it as “a fixed mental attitude or disposition that predetermines a person’s responses to and interpretations of situations” (n.p.). Bayer and Gollwitzer (2005) found that when pursuing goals, people are involved in the following tasks: “choosing between potential goals, planning the implementation of a chosen goal, acting on the chosen goal, and evaluating what has been achieved” (p. 314). During these tasks, different cognitive procedures or mindsets take over. This concept of mindset seems to differ from the dictionary definition in that it is not a fixed concept.

According to Dweck (2008), a belief about oneself guides a large part of that person’s life and “permeates every part of your life. Much of what you think of as your personality actually grows out of this ‘mindset’” (p. ix). Dweck delves even deeper, crediting an individual’s mindset, a person’s beliefs in his or her personal qualities, as highly important. The concept of a mindset is further divided into two categories. A fixed mindset is “believing that your qualities are carved in stone” (p. 6). A growth mindset is “The belief that your basic qualities are things you can cultivate through your efforts” (p. 7). One of the examples Dweck used to illustrate the mindsets involved four-year-olds doing jigsaw puzzles. She found that those children with fixed mindsets continued to put together the same puzzle over and over again, while those with growth mindsets would choose different and difficult puzzles to put together, enjoying the challenge. Dweck explained, “So children with the fixed mindset want to make sure they succeed. Smart
people should always succeed. But for children with the growth mindset, success is about stretching themselves. It’s about becoming smarter” (p. 17).

Dweck’s (2008) research also focused on nonnative English speaking freshmen at the University of Hong Kong where courses and texts are in English. When offered a chance to take a course in order to improve their English skills, those students with a fixed mindset were not interested, which those with a growth mindset were very interested. She explained:

Believing that success is about learning, students with the growth mindset seized the chance. But those with the fixed mindset didn’t want to expose their deficiencies. Instead, to feel smart in the short run, they were willing to put their college careers at risk. (p. 18)

Moreover, Dweck found that those with a fixed mindset are nonlearners. Therefore, a doctoral mentee who has a growth mindset may believe that application and experience can help the individual to learn and thrive.

In sum, the concept of mindset denotes a person’s attitude or disposition when responding to situations or goal attainment. Because a mindset is subject to context or personality, it is difficult to assign a one-size-fits-all definition. Rather, there may be different mindsets that are situational. Like the concept of mentoring, the concept of mindset is difficult to define because there are different contexts that must be taken into consideration. There is a paucity of studies that combines the two concepts of mentoring and mindset, especially with regard to empirical research. In her study of future principles, Searby (2008) used the term mentoring mindset to describe the knowledge, skills, and dispositions a protégé needs in order to be prepared for a mentoring relationship. Further empirical research on the mentoring mindset in higher education
would provide the context of the doctoral student and faculty mentor relationship for the mentoring mindset construct.

**Theoretical Framework**

The theoretical framework is an integral part of a qualitative approach to research, including the phenomenology tradition, which helps to inform the study and guide the research process, analysis and discussion (Creswell, 2007). Therefore, mentoring theory is important to a study’s research design. However, there is no dominant theory on mentoring and little development in the core concepts of mentoring (Bozeman & Feeney, 2007). The concept of mentoring is complex, which may explain “why research on mentoring is so scattered and why the development of a cumulative, empirically based theory of mentoring still seems daunting even after decades of hard work” (p. 730). In order to provide a theoretical framework that will inform the study and provide the lens to understand the research question, it is important to consider two fundamental concepts of mentoring, namely relational or developmental processes (Ragins & Kram, 2007) and adult learning (Knowles, Holton, & Swanson, 2005).

Because mentoring is taking place in a higher education setting, the concept of learning is an important element of the mentoring relationship. Zachary (2009) stated that “the best learning occurs when there is a mix of acquiring knowledge, applying it through practice, and critically reflecting on the process” (p. 2). Zachary added that a mentee should take an active role in his or her own learning and that the mentoring relationship depends largely on how open a mentee is to learning. As adult learners, doctoral students can be “empowered to learn about learning and confront challenges to their mindsets,
their writing and their goals” (Mullen et al., 2010, p. 194). Learning and relating to one another are important concepts of the mentoring relationship (King, 2003; Kram, 1983); therefore, the theories that will be foundational to the research study are relational mentoring theory and adult learning theory.

**Relational mentoring theory.** To help delineate fundamental processes, relational mentoring utilizes relational cultural theory (RCT) as a framework (Fletcher & Ragins, 2007). Grounded in feminist theory, the guiding principle of RCT is “that human growth, rather than occurring primarily through the processes of separation and individuation, occurs primarily in a context of relational connection with others” (p. 377). Unlike the traditional definition of mentoring as being hierarchical and top-down (Mullen, 2006), relational mentoring provides a framework that encompasses interdependent mentoring processes for both the mentor and mentee (Ragins & Kram, 2007) that includes a high quality mentoring relationship (Ragins & Verbos, 2007), and “mutual growth, learning and development within the career context” (Ragins, 2005, p. 10, as cited in Fletcher & Ragins, 2007, p. 374).

There are three key tenets of RCT that are applied to relational mentoring. First, interdependent self-in-relation “highlights how personal growth for both mentors and protégés is inextricably connected to their partners” (Fletcher & Ragins, 2007, p. 380). Second, growth-fostering interactions are “two-directional microprocesses within social interactions that lead to growth and learning” (p. 381). Third, systemic power refers to gender and power dynamics, which “places the construct of relational mentoring within a larger societal context and makes visible the ways in which relational activity is subject to systemic dynamics outside of the relationship itself” (p. 390). These three tenets
highlight the differences between relational mentoring and traditional, hierarchical mentoring.

In addition to relational mentoring, Chandler (2006) coined the term “relational savvy” to describe a mentee’s adeptness at cultivating the relationship and credits relational attitudes as one of seven dimensions that inform a mentee’s relational savvy. The other dimensions include the following: (a) developmental proactivity (initiating developmental opportunities), (b) managing interactions, (c) developer awareness, (d) mutuality orientation, (e) feedback orientation, and (f) social skills. Relational mentoring and relational savvy may explain why the high-quality mentoring relationships between faculty members and doctoral students are effective and successful.

Adult learning theory. Two important parts of adult learning theory are andragogy and self-directed learning. Adult learning theory focuses on the differences between child-centered learning and adult-centered learning, which requires a different approach than that of traditional pedagogy (Kiely, Sandmann, & Truluck, 2004). Unlike pedagogy, androgogy “is an intentional and professionally guided activity that aims at a change in adult persons” (Knowles et al., 2005, p. 60). The androgogical learning model is based on six assumptions: (a) an adult’s “need to know why they need to learn something before undertaking to learn it” (p. 64); (b) the adult learner’s “self-concept of being responsible for their own decisions, for their own lives” (p. 65); (c) the role of the adult learner’s greater volume and different quality of experiences than that of youths; (d) the adult learner’s readiness to “learn those things they need to know and be able to do in order to cope effectively with their real-life situations” (p. 67); (e) adult learner’s orientation to learning motivates them “to learn to the extent that they perceive that
learning will help them perform tasks or deal with problems that they confront in their life situations” (p. 67); and (f) an adult learner’s motivation to learn, which include external motivators such as promotions and higher salaries, and internal motivators such as self-esteem and increased job satisfaction.

Adult learning theory also emphasizes greater autonomy and direction on the part of the adult learner and is a “multidimensional phenomenon” that “takes place in various contexts” (Merriam, 2008, p. 97). To this end, self-directed learning includes fundamental goals (Merriam, 2001): (a) “the development of the learner’s capacity to be self-directed”; (b) “the fostering of transformational learning”; and (c) “the promotion of emancipatory learning and social action” (p. 9). With regard to mentoring, Zachary (2005) stated the following:

Mentoring is the quintessential expression of self-directed learning. At the heart of the definition of SDL (and mentoring) is individual responsibility for learning. Self-responsibility means the learner accepts ownership and accountability (individually or with others) for setting personal learning objectives, developing strategies, finding resources, and evaluating learning. In a mentoring relationship, the responsibility is mutually defined and shared. (pp. 223-224)

Self-efficacy is an integral part of self-directed learning. Self-efficacy is defined as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given achievements” (Bandura, 1997, as cited in Wlodkowski, 2008, p. 187). Believing in one’s capabilities to achieve a goal or accomplish a task may influence an adult learner’s motivation.

In sum, self-directed learning and andragogy are foundational to adult learning theory, which presents the adult learner as a self-motivated and intentional learner. Relational mentoring theory incorporates interdependent mentoring processes that
promote growth and development. These two theories will provide a lens through which to view and understand the doctoral student’s mentoring mindset.

**Summary of the Literature**

While conducting this literature review, the core themes of the history of mentoring, mentoring processes, mentoring graduate students, benefits of the mentoring relationship, challenges of the mentoring relationship, effective mentee characteristics, concept of mindset, and the theoretical framework emerged.

Although a concise, all-encompassing definition of mentoring has remained elusive (Bozeman & Feeney, 2007), most of the outcomes of mentoring refer to the importance of advancing the mentee’s career and psychosocial development. Kram (1983) referred to these as mentoring functions, which are essential in order to enhance both the mentor’s and mentee’s individual development. It is worth noting that King (2003) considered intellectual development a third function in a graduate-level mentoring relationship.

Effective mentoring relationships yield benefits for both the mentor and mentee (Ehrich et al., 2004). While progressing through the mentoring phases (Kram, 1983) or processes (Lentz & Allen, 2010; Roberts, 2000) in an effective way is important, understanding the negative outcomes (Bozeman & Feeney, 2007) in mentoring relationships is equally important. Mullen (2006) suggested that mentoring was a not a one-size-fits all, stating, “No one mentoring strategy is a panacea for student engagement, quality of work, and program success, but each is nonetheless a critical piece of the puzzle” (p. 58).
Mentoring in higher education is “a process of mutual learning and scholastic engagement in graduate studies” (Mullen et al., 2010, p. 179). An important part of the doctoral student and faculty member mentoring relationship is how personalities affect the relationship, which also includes a need for the mentor and mentee to share similar work ethic and drive (Johnson & Ridley, 2004).

The graduate mentoring relationship is complex and dynamic (Ehrich et al., 2004) and provides support for a graduate student’s satisfaction with the graduate school experience (Lyons & Scroggins, 1990). Because of the reciprocal nature of the mentoring relationship (Ehrich et al., 2004), both mentee and mentor reap benefits from the relationship (Kram, 1985; Johnson, 2010; Paglis et al., 2006). Dysfunctional dynamics (Kram, 1983) may lead to negative outcomes (Bozeman & Feeney, 2007), but focusing on the qualities and contextual characteristics of mentoring and not making blanket assumptions that all mentoring relationships are the same (Johnson & Ridley, 2004) should help mentee-mentor dyads to progress through the mentoring phases.

In relating to each other, Kram (1983) identified certain positive mentee characteristics, such as having potential, being coachable and being pleasant to work with. Edwards and Gordon (2006) found that there were certain desirable mentee characteristics that may help to enhance the mentoring relationship, including accepting mentor’s guidance, engaging academically with the mentor, and being “proactive in seeking out opportunities to communicate with the mentor,” to name a few (p. 15). Lentz and Allen (2010) also stated that initiative, intelligence, emotional stability, career motivation and self-efficacy, and openness to experience all key mentee characteristics related to the mentee’s readiness to be mentored. Additionally, Chandler’s (2006)
relational savvy is “protégé adeptness at initiating and cultivating developmental relationships” (p. 1) may add to the development and growth of the mentoring relationship.

The concept of mindset denotes a person’s attitude or disposition when responding to situations or goal attainment. Because a mindset is subject to context or personality, it is difficult to assign a one-size-fits-all definition. Rather, there may be different mindsets that are situational. Like the concept of mentoring, the concept of mindset is difficult to define because there are different contexts that must be taken into consideration. There is a paucity of studies that combines the two concepts of mentoring and mindset, especially with regard to empirical research. In her study of future principles, Searby (2008) used the term mentoring mindset to describe the knowledge, skills, and dispositions a protégé needs in order to be prepared for a mentoring relationship. Further empirical research on the mentoring mindset in higher education would provide the context of the doctoral student and faculty mentor relationship for the mentoring mindset construct.

Self-directed learning and andragogy are foundational to adult learning theory, which presents the adult learner as a self-motivated and intentional learner. Relational mentoring theory incorporates interdependent mentoring processes that promote growth and development. These two theories will provide a lens through which to view and understand the doctoral student’s mentoring mindset.

Mentoring in an organization is different from mentoring at the graduate level because of the dynamic and complex nature of graduate student-faculty mentor dyads (Hall & Burns, 2009; Lyons & Scroggins, 1990; Sambrook et al., 2008). The proposed
study would add to the existing research regarding faculty mentoring of doctoral students by providing insight into the doctoral mentee’s mentoring mindset. A phenomenological study would explore the essence of faculty mentors and their experiences with doctoral students who are prepared to be mentored. The purpose of this qualitative study was to describe and explore from the mentor’s perspective what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor at a Research I University in the Southern United States.
Methods

The purpose of this qualitative study was to describe and explore from the mentor’s perspective what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor at a Research I University in the Southern United States. The research study was guided by the following central research question: “What constitutes a mentoring mindset in a doctoral student who is being mentored by a graduate faculty mentor?” I chose a qualitative research approach to the study, phenomenology, because it is the most appropriate method to utilize in order to describe and define the phenomenon of faculty mentors’ perceptions of a doctoral student’s mentoring mindset.

Qualitative Research Approach

Qualitative research is an approach utilized in order to explore and understand a central phenomenon (Creswell, 2008). Denzin and Lincoln (2005) stated that “qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them” (p. 3). Qualitative research also involves the utilization of different designs in order to best answer a research problem. These designs follow a process that, according to Creswell (2007), begins with assumptions or worldviews, which lead to the collection of data in a natural setting of those being studied and an inductive data analysis. The final report reflects the participants’ voices, the researcher’s reflexivity (self-awareness), an explanation and
interpretation of the problem, and adds to the scientific literature (Creswell, 2007). The characteristics of qualitative research include a recognition that the views of the participants are important, that general open-ended questions should be asked in the participants’ natural setting, and that research plays an advocate role in changing individuals’ lives for the better (Creswell, 2008).

Denzin and Lincoln (2005) stated that the qualitative research process involves three generic research activities that include five phases. Phase one is when the researcher socially situates himself or herself into the study. The second phase involves the paradigms and assumptions that the researcher uses to guide the study. Phase three entails choosing the research design that will best answer the research question. Phase four involves the methods the researcher will use to collect and analyze the data, including how methods of data collection will be used. In phase five, the researcher interprets and evaluates the data. This is the most creative phase because “there are multiple interpretive communities, each with its own criteria for evaluating interpretations” (Denzin & Lincoln, p. 26).

The process presented by Merriam (2002) begins with the research problem and sample selection “from which the most can be learned” (p. 12). Second, data collection and analysis takes place simultaneously. More than one method of data collection will increase the study’s validity. Third, the final report should be written for the intended audience and should include a discussion of the research problem, the methodology, the findings, and the significance to theory and practice (Merriam).

The rationale for conducting qualitative inquiry is when variables are unknown and the researcher needs to explore participant perceptions in order to best answer the
research problem (Creswell, 2008). On several levels, it is sometimes difficult to derive full meaning from a quantitative perspective. Lincoln and Guba (1985) stated that “It is not possible to describe or explain everything that one ‘knows’ in language form; some things must be experienced to be understood” (p. 195). According to Moustakas (1994), the researcher for a phenomenological study abstains from making suppositions, focuses on a specific topic freshly and naively, constructs a question or problem to guide the study, and derives findings that will provide the basis for further research and reflection. In phenomenological science a relationship always exists between the external perception of natural objects and internal perceptions, memories, and judgments. (p. 47)

I chose a qualitative phenomenology approach for this study because it allowed me to experience and fully explore what constituted the phenomenon of the mentoring mindset of doctoral students from the faculty mentors’ perspective.

The Phenomenological Approach

There are several different models of qualitative research approaches, which share the following common elements: (a) the recognition of the value of qualitative inquiry where a quantitative method is inappropriate; (b) focusing on the experiences as a whole rather than on the sum of its parts; (c) the recognition of the value of experiences; (d) the use of the researcher to collect data in the field through first-person interviews; (e) recognizing the importance of experience to understand human behavior; (f) creating research questions that indicate the researcher’s personal commitment; and (g) recognizing experience and behavior as an integral part of the research (Moustakas, 1994). In phenomenology, the researcher attempts to describe the meaning of multiple individuals’ experiences connected to a shared phenomenon (Creswell, 2007). The goal of phenomenology is to describe and portray the individual experiences of the
phenomenon and transform them into universal themes connected to the experiences. For this study, the primary phenomenological approach is focused on Moustakas’s transcendental phenomenology, in which the goal is to illuminate the participants’ shared experiences with the central phenomenon (Creswell). Transcendental phenomenology is a scientific study of the appearance of things, of phenomena just as we see them and as they appear to us in consciousness. Any phenomenon represents a suitable starting point for phenomenological reflection. The very appearance of something makes it a phenomenon. The challenge is to explicate the phenomenon in terms of its constituents and possible meanings, thus discerning the features of consciousness and arriving at an understanding of the essences of the experience. (p. 49)

In transcendental phenomenology, transcendental refers to “what can be discovered through reflection on subjective acts and their objective correlates”, while phenomenology refers to utilizing “only the data available to consciousness—the appearance of objects” (Moustakas, 1994, p. 45). Therefore, transcendental phenomenology places emphasis on subjectivity and the researcher’s discovery of the essences of experience, which provides a framework for deriving knowledge (Husserl, 1975, as cited in Moustakas, 1994).

**Philosophical Assumptions**

In qualitative research, there are certain philosophical assumptions that the researcher must acknowledge when designing a research study. A research paradigm or worldview represents what we as researchers think about the world or consider our systematic set of beliefs (Lincoln & Guba, 1985). Understanding one’s worldview and exploring one’s assumptions within that worldview will help to provide a logical consistency to the research (Hatch, 2002).
Qualitative inquiry takes a constructivist approach. In constructivism, or naturalistic inquiry, there are five axioms that guide one’s research: ontology (the nature of reality), epistemology (the relationship of the knower to the known), generalization possibilities, causal linkage possibilities, and axiology (the role of values in the inquiry) (Lincoln & Guba, 1985). A constructivist paradigm or worldview is how the qualitative researcher views the world. Ontologically, the constructivist believes that there are multiple realities that are assembled in order to reach an understanding about the reality. Epistemologically, the constructivist believes that the researcher and participant influence one another. Regarding generalizations, the constructivist believes that the research study describes an individual case. Regarding causal linkages, the constructivist believes that everything is being shaped simultaneously so that there is no definite cause and effect. Axiologically, the constructivist believes that inquiry is value-bound and inductive (Lincoln & Guba).

When contemplating one’s worldview, one should consider the aforementioned axioms. Therefore, my philosophical worldview is more aligned with constructivism in ontology, epistemology, axiology, and inductive logic, while it is more neutral with regard to generalizations and causal linkages. Ontologically, I believe that because individuals are unique and experience the world in different ways, there are unique multiple realities (Creswell & Plano Clark, 2011; Hatch 2002). Understanding the participants’ experiences is important to the research and may be addressed qualitatively. Epistemologically, I believe that the researcher and participants co-construct reality in the participants’ environment (Hatch, 2002; Teddlie & Tashakkori, 2009). This means that the reality is subjective and that the relationship between the researcher and participants
is close (Creswell & Plano Clark). Axiologically, it would be difficult for me to separate personal values and biases from the research. I was reflexive in acknowledging these values, biases, and assumptions and include them in the research report (Creswell, 2008). My logic tends to be more inductive, which involves looking at participants’ views to find patterns and themes in the data (Teddlie & Tashakkori). Regarding the aforementioned assumptions, I tend to favor a more constructivist view.

My worldview is more pragmatic with regard to generalizations and causal linkages. According to Teddlie and Tashakkori (2009), generalizations in pragmatism emphasize ideographic statements, or “time- and context-bound working hypotheses” (p. 86), along with external credibility and transferability issues. Causal relations may exist, but they are described as “transitory and difficult to identify” (p. 93).

Site

The sample of participants in phenomenology includes individuals who will adequately provide contributions to the development of textural and structural descriptions from the participants (Creswell, 2007). Because each participant had to meet the same criteria of being a graduate faculty member who serves on doctoral committees as well as being a recipient of the Graduate Dean’s Award for Excellence in Mentorship, criterion sampling was employed, which also helped to insure quality assurance (Creswell, 2007). Also, a maximal variation sampling strategy was used in order to identify 8-12 graduate faculty members from different academic disciplines, which helped to “present multiple perspectives of individuals to represent the complexity of our world” (Creswell, 2008, p. 214).
For the purposes of this research study, 10 graduate faculty members were purposefully selected from the following academic areas: arts and sciences, education, biomedical sciences, engineering, health professions, and public health. A Research I University in the Southern United States was chosen because of the availability of several varying academic disciplines and graduate programs. I identified a gatekeeper, who was someone who has a formal role at the research site, and who helped me locate participants in specific academic disciplines who met the criteria of the study (Hammersley & Atkinson, 1995, as cited in Creswell, 2008). This gatekeeper was an administrator at the university, I discussed the research project with him and asked for his help in identifying faculty members who meet the criteria of the research study. Each participant had to have graduate faculty status, be currently mentoring doctoral students and serving on dissertation committees, and be a recipient of the Graduate Dean’s Award for Excellence in Mentorship. A participant invitation (Appendix C) and information sheet (Appendix D) were emailed to the faculty members and before each interview began, the participants were provided with a copy of the participant invitation and information sheet. I obtained a waiver of consent approval from my institution’s IRB during the IRB approval process.

Data Collection

The qualitative researcher, as human instrument, uses techniques such as interviews, observation, documents, audio recordings, and unobtrusive means during data collection (Lincoln & Guba, 1985). All qualitative research relies not only on rich, thick, detailed, and full data, but also the quality of the data (Creswell, 2007; Lincoln & Guba).
The types of data that I collected for this phenomenology study were in-depth face-to-face interviews, my reflective notes written after each interview, and participant reflections on the mentoring mindset.

I conducted 10 face-to-face in-depth structured interviews that lasted between 25-60 minutes each, which depended on the length of answers that were provided by the participants. Interviews were scheduled to take place within a 4-week time period. I was cognizant of the faculty members’ busy schedules. Therefore, each face-to-face interview was conducted at a time and place that was convenient to the participant and that also provided privacy. Interviews were audio recorded while I took notes. I also wrote reflective notes regarding the research during the data collection period immediately following each interview. Participants were asked to reflect on one question regarding the phenomenon and to write any thoughts and experiences regarding the phenomenon on paper and return the question in a stamped, addressed envelope that I provided (see Appendix E).

Interview protocols were developed in order to answer the central question as well as the subquestions for the research study. After developing the initial demographic interview questions, the other interview questions were developed in order to understand the characteristics of effective mentees and what might constitute a mentoring mindset in them. The interview questions were open-ended in order to foster the emergent nature of qualitative inquiry and to extract each participant’s experience (Creswell, 2007; Hatch, 2002).

The interviews were audio-recorded and transcribed verbatim by me. The files were saved on a secure server under each participant’s corresponding number. Each
interview was saved in a Word document and organized in the qualitative software package NVivo. My reflective notes were saved in a Word document and compared with the themes developed from participant interviews as well as the participant reflections on the definition of a mentoring mindset.

**Data Analysis**

Data analysis for qualitative research is inductive, and the main issue for the researcher is how to best make sense of the data “in ways that will, first, facilitate the continuing unfolding of the inquiry, and second, lead to a maximal understanding (in the sense of *verstehen*) of the phenomenon being studied in its context” (Lincoln & Guba, 1985, p. 225). In this phenomenology study, I employed a modification of the Stevick-Colaizzi-Keen method to analyze the data (Creswell, 2007; Moustakas, 1994), which included the following structure, the researcher will (a) describe her own experiences with the phenomenon being studied in order to focus on the participants’ experiences; (b) develop a list of relevant statements from the collected data regarding the description of the experience, treating each statement as having equal value while listing the nonrepetitive, nonoverlapping statements (horizontalization); (c) group or cluster the relevant statements into meaning units or themes; (d) write a textural description which is the combination of significant statements and themes that are then used to describe what the participants experienced (Creswell, 2007); (e) write a structural description of how the experience happened by reflecting on “the setting and context in which the phenomenon was experienced” (Creswell, 2007, p. 159); and (f) describe the essence of the experience by combining the textural and structural descriptions. Although NVivo 10
was used to help organize the data, I analyzed and coded the data for significant statements and themes independently.

**Establishing Trustworthiness**

In order to address and minimize the possible threats to research trustworthiness in qualitative research, the researcher must establish confidence in the truth value of the findings with regard to participants and context, the applicability to other similar contexts and participants, consistency in repeating the inquiry, and neutrality of research findings (Lincoln & Guba, 1985). Trustworthiness in qualitative inquiry may be reached by establishing credibility, transferability, dependability, and confirmability (Lincoln & Guba).

Credibility is established through prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, referential adequacy, and member checking. Transferability is established through thick description, yet it is not up to the researcher to verify transferability; it is up to the interested party to figure out if transferability is possible. Dependability is established through a dependability audit in which an auditor examines the process of the research study and determines if it is acceptable. Similarly, confirmability is established through a confirmability audit in which an auditor examines the end product of the research and determines if it is supported by the data.

I used the following strategies to achieve trustworthiness: triangulation, a process of combining and corroborating multiple forms of data collection, methods, and analyses (Creswell, 2008); thick descriptions, the process of making detailed descriptions of the
research setting in order to make transferability and comparisons to other contexts possible; reflexive journaling, the process the researcher uses to reflect as needed on biases and methodological decisions (Lincoln & Guba, 1985); and an audit trail, a systematic recording of the research process, which is based on Halpern’s categories, and includes raw data, data reduction and analysis, data reconstruction and synthesis, process notes, researcher intentions and dispositions, and information on instrument development.

**Ethical Considerations**

In an effort to ensure that participants in the study were treated with fairness and dignity (Hatch, 2002), I adhered to the ethical and legal principles found in the *Publication Manual of the American Psychological Association* (2010), which include the following: “to ensure the accuracy of scientific knowledge, to protect the rights and welfare of research participants, and to protect intellectual property rights” (p. 11). In order to become familiar with the guidelines for ethical research practice such as the report from the Belmont Commission (Hatch, 2002), I took the online investigator training offered by her institution’s Institutional Review Board (IRB) prior to beginning data collection for this particular study. Any research conducted at an accredited college or university is subject to review by that institution’s IRB. I have received approval from the university’s IRB, conducted this research and wrote the final report according to the stipulated IRB guidelines.

I ensured confidentiality and anonymity to research participants in the participant invitation, information sheet, and during the interview. All data from interviews and researcher notes are kept under lock and key in a fireproof cabinet and will be destroyed
after one year. Each participant is identified by a number and I assured them that the number, not their names, will be used in the final research report. Each participant was assured that participation in the research study is completely voluntary and was informed that he or she may drop out of the study at any time, without retribution.

**Role of Researcher**

I have worked in higher education for more than 12 years and currently hold a senior staff position in the graduate school of a major research university in the Southern United States. As a graduate student and employee in a graduate school at a Research I University, I have firsthand knowledge of the positive and negative impacts the faculty-student mentoring relationship can have on a graduate student’s academic experience, the overall academic and professional success of the student, and time-to-degree. Through my years of experience in a higher education setting, I became aware of differences in mentoring across academic disciplines at the departmental and school levels. To date, I have informally observed three different models of mentor on campus. First, the mentor is usually, but not always, the graduate student’s committee chair. This differs in certain biomedical science programs where the mentor is a different faculty member within the department and is not allowed to be the student’s committee chair. Second, the mentor is assigned to the student, which is dependent upon the student’s research interests. Third, the student chooses the mentor from the faculty members within the student’s department. Although the definition of mentor differs slightly among the varying academic disciplines, as a qualitative researcher, it was important for me to keep an open mind and to allow new ideas to emerge throughout the research process (Creswell, 2007).
Findings

This chapter includes the findings of a phenomenological research study regarding graduate faculty members’ experiences with mentoring doctoral students. The purpose of this qualitative study was to describe and explore from the mentor’s perspective what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor at a Research I University in the Southern United States. This research study was guided by the following central research question: “What constitutes a mentoring mindset in a doctoral student who is being mentored by a graduate faculty mentor?” Research subquestions to guide the study included the following:

1. How do faculty members describe the process of mentoring doctoral students?
2. How does a faculty mentor describe the characteristics of a doctoral student who appears to be poised to benefit from a mentoring relationship?
3. How does a faculty mentor describe the characteristics of a mentee who does not seem to be poised to benefit from the mentoring relationship?
4. How does a faculty mentor describe the mentoring mindset of a doctoral student who is ready to be mentored?

The faculty members were graduate mentors from various academic disciplines that award doctoral degrees. As the data were analyzed, the following themes and subthemes emerged:

(a) Context of the mentoring relationship

1. Structure
2. Process

3. Results

(b) Basic knowledge and skills of the mentee
   1. Preparatory abilities and research experience
   2. Communication skills

(c) Learning orientation of the mentee
   1. Demonstrating critical thinking
   2. Being open to feedback and others’ perspectives

(d) Personal Attributes
   1. Interpersonal skills and compatible personalities
   2. Risk taking and self confidence
   3. Motivation

(e) Mentoring mindset of a doctoral student
   1. Open to a learning relationship
   2. Capability to succeed

These themes were used to inform the textural and structural descriptions as well as the essence of the doctoral student’s mentoring mindset.

Setting/Context

This research study was conducted at a Research I University with a total student enrollment of over 18,000, located in a metropolitan city in the Southern United States. The university receives more than $400 million in research support and is accredited by the Southern Association of Colleges and Schools. The institution also has a large
graduate school that offers a wide variety of graduate programs in arts and sciences, business, engineering, education, public health, biomedical sciences, natural sciences, and social and behavioral sciences. Collaborative degree programs offer diverse academic opportunities and the university has a reputation for a high level of diversity among faculty, students, and visiting scholars.

Because the university is located in an urban setting, the campus encompasses more than 80 square blocks. Efforts to make the university campus more student-friendly have included the addition of a large “campus green,” a state of the art recreation facility, and cafeterias that offer a wide variety of cuisine. Additionally, plans for new construction or renovating existing structures have been approved by the Board of Trustees for university buildings including the School of Education and the student union. Because of the importance of mentoring to graduate student success, campus-wide educational initiatives have been put into place in recent years in order to provide seminars and literature on the subject.

In-depth interviews are the primary source of data in phenomenological research (Creswell, 2007). For this study, the primary phenomenological approach is focused on Moustakas’s (1994) transcendental phenomenology, in which the goal is to illuminate the participants’ shared experiences with the central phenomenon (Creswell, 2007). The interviews were conducted at a time and place that was convenient to the individual faculty member. One of the interviews took place in my office, while the remaining nine interviews were conducted in the respective faculty member’s office or department. In addition to the interviews, a reflection question was left with the participants to answer at
their convenience: “After reflecting on our interview, what is your perception of the mentoring mindset of a doctoral student who is prepared to be mentored?”

**Participants**

Ten graduate faculty members participated in this research study. To be considered for inclusion, individuals had to meet the following criteria: graduate faculty status, currently serve on dissertation committees, and be a recipient of the *Graduate Dean’s Award for Excellence in Mentorship*. In order to have received the *Mentorship Award*, award recipients had to meet the criteria on the nomination form (see Appendix A). The participants consisted of four females and six males from diverse academic backgrounds, different faculty ranks, and varying years of experience working in higher education. All but one participant were native English speakers, and their collective years of teaching in higher education ranged from 11 to 25 with an average of 20.1 years. Each participant was affiliated with a graduate program that awards doctoral degrees. They are now introduced and identified by the order in which each was interviewed in order to ensure their anonymity.

**Participant 1 (P1).** Participant 1 (P1) is a full professor in the Joint Health Sciences with a background in anatomy. Although she initially wanted to be a veterinarian, she became interested in research and academia while taking an undergraduate course:

One of the classes I took we had to mess around with something in the lab and it was interesting. So then I got a job doing research and while still an undergrad I was in an undergraduate research program. It was very active at that school so I did research for a couple of years and then worked in a lab and then realized I couldn’t go anywhere if I didn’t have a Ph.D. and so that’s what led me to academia.
P1 has mentored both undergraduate and graduate students and has served on several doctoral committees. Before agreeing to allow a graduate student to become a part of her lab, P1 meets with the student in order to verify that the student’s scholarly project interests and time commitments are aligned with hers. According to P1, the purpose of mentoring is to teach the student how to think critically and how to collect data as well as guide the student in experimental design and writing.

Participant 2 (P2). Participant 2 (P2) is an associate professor in the School of Health Professions and has a background in biology and biobehavioral health. He chose a career in academia because he believes it was something he was born to do:

There are times when I walk through this university and it happens to me a lot in the first five years. And I say, “I am such a lucky guy.” I mean, this is what I do. I don’t know how to do anything else. I really don’t.

P2 mentors both graduate students and postdocs, although he will not turn down an undergraduate student who is asking for help. P2 believes that mentoring is a relationship of trust and empowering the mentee:

Trust is a vase that is held by 2 people. If one of them removes their hands, the glass vase goes straight to the floor… you never remove your hand. I’m always going to keep the hand there. Don’t remove it because we might be able to glue it, but it will never be the same.

P2 said there has to be a connection between the faculty member and graduate student in order for the mentoring relationship to work. Therefore, before he will accept a doctoral student as a mentee, P2 will interview the student in order to assess the student’s personality and communication skills.

Participant 3 (P3). Participant 3 (P3) is a full professor in the Joint Health Sciences and has a background in biology and molecular biology. P3 was interested in science early in her childhood. After receiving her bachelor’s degree, her family wanted
her to pursue medical school. She knew she did not want to go to medical school and had no intention of going into academic science, stating, “I went and got a Ph.D. and it just flowed from there. It wasn’t something I consciously said ‘oh I’m going to go into academic science.’ I just knew I wanted to be a scientist.” P3 began mentoring students as a postdoctoral fellow. Currently, she mentors students from different biomedical programs including cell biology and pathology. P3 stated that mentoring should help the student become a good scientist:

The purpose of the mentoring relationship I think is to get the students to a point where they can kind of think independently, and work independently and understand the scientific process. So, the main point I think is to teach them to be good scientists.

**Participant 4 (P4).** Participant 4 (P4) is a full professor in the School of Engineering and has a background in chemical engineering and biochemistry. The following three things led P4 to a career in academe:

One, the ability to sort of do research on projects that I was interested in. Two, training students’ teaching, training students how to do research, how to train in my discipline…chemical engineering, bio-engineering. And, three I think was really of use, that research and training to create new knowledge and value for society.

P4 began mentoring undergraduate, master’s, and Ph.D. students in 1988. Before the mentoring relationship begins, P4 interviews potential mentees to make sure that the student understands his expectations. The potential mentee also speaks to current mentees in order to get a sense of what the lab environment is all about. Doctoral students comprise the majority of P4’s mentees. He stated that the purpose of the mentoring relationship for Ph.D. students is “to train them to become independent investigators. So that we send them off into the wide world and they go to academia or industry, they are ready to take on a position and succeed at that level.”
**Participant 5 (P5).** Participant 5 (P5) is a research professor in the School of Engineering and has a background in chemistry and physical chemistry. After spending several years in a government career, P5 came to work in higher education, stating “I just like the environment in academia. One’s free to pursue one’s interests. Although, I think in industry, one can do that just as well with a little bit of patience and creativity.” P5 mentors mostly Ph.D. students and is a proponent for making sure that the mentor’s personality is compatible with the mentee’s personality. Along with technical guidance, P5 said that the purpose of the mentoring relationship is to provide guidance so that the student may develop his or her full potential, adding:

I think it’s best if one treats his student whom one is mentoring as essentially an equal with just a little bit less experience. So there’s guidance and setting an example for how to approach one’s work and one’s career.

**Participant 6 (P6).** Participant 6 (P6) is a full professor in the School of Education and has a background in psychology, counseling and guidance, and health education administration. After working at the local and state levels in health education administration, P6 decided to pursue a Ph.D. so that he could understand “the big picture” of affecting change in health education from varying perspectives. P6 stated that the purpose of mentoring is to guide and push students to accomplish more than they thought they could do by helping students identify their strengths and weaknesses and to develop more strengths; to help the student to get to a place where he or she is able to function independently from the research and embrace new opportunities. P6 also stated that the purpose of the mentoring relationship is “for [the student] to feel confident in their own abilities and skills, for me to make sure that we haven’t omitted something from their
formal instruction, and that we have the opportunity to reinforce that through one-on-one experiences.”

**Participant 7 (P7).** Participant 7 (P7) is a full professor in the School of Education and has a background in early education and childhood development. While working on her master’s degree, P7 had an advisor who provided the momentum for her desire to continue her education and achieve her Ph.D. On average, she mentors five to six doctoral students. P7 said that the purpose of the mentoring relationship is about knowledge, growth, and learning, as well as “maximizing our potential and being the best we can be for our students, whoever our students are.”

**Participant 8 (P8).** Participant 8 (P8) is a full professor in the School of Public Health and has a background in education and public health. On average, she mentors five doctoral students from nursing, health professions, and predominantly health education. P8 stated that the purpose of the mentoring relationship depends on the student. When it comes to her top students, mentoring is more of a dialogue about how to accomplish a research project. With her other students, mentoring is more like tutoring and helping them understand what they may have missed in their coursework. Although P8 stated that the mentoring relationship should be collegial, she understands that students are different. She explained, “You know, with some students it’s fun, but with others, it’s not so fun. But mostly I like it when we just have this ongoing relationship and exchange.”

**Participant 9 (P9).** Participant 9 (P9) is a full professor in the College of Arts and Sciences and has a background in aquatic and marine biology. He mentors four to five doctoral students at one time. P9’s perception of the purpose of the mentoring
relationship is to help students develop the skills to become a successful professional, which include reading, writing, critical thinking, and basic technical lab skills. His responsibility as a mentor is to help the student discover a path. He explained that “if the path is too wide, the students could go all over the place and not make progress. If it’s too narrow, we point them in the specific direction, we don’t get to see what they do.” In order to guide the student along this path, P9 talks to the student to discover the student’s scientific interest; observes the student for at least a semester in order to assess the student’s drive and ambition to achieve goals; and provides direction and guidance when needed. However, P9 added, “but we don’t force them to work. I want to see what they can do on their own because in this business, it’s what you do on your own that will determine whether you’ll be successful in the future.”

**Participant 10 (P10).** Participant 10 (P10) is a full professor in the College of Arts and Sciences and has a background in zoology and marine science. He stated that his purpose in the mentoring relationship is to help mentees become good scientists, mentors, and teachers in society who will inform people about the importance of science and conservation. In order to achieve this goal, P10 attempts to identify with the student, treat the student as an individual, and tries to nurture the student’s scientific career based on the student’s personality. He also tries to be a good role model when it comes to altruism and work ethic, stating “Work ethic will take care of 80% of your problems if you’re in there just working and not wasting your time.”
Themes

Following each participant meeting, I transcribed the interview verbatim and compared the transcriptions with researcher notes written during the interview. I then read each interview transcript while listening to the audio recording in order to verify the accuracy of the transcription. During the course of data collecting and analysis from the 10 in-depth face-to-face interviews, and after reading the transcriptions several times, I identified significant statements from the participants (see Appendix F). From the significant statements, the following themes and subthemes emerged and are supported by the participants’ own words, which provide rich, thick descriptions:

(a) Context of the mentoring relationship
   1. Structure
   2. Process
   3. Results

(b) Basic knowledge and skills of the mentee
   1. Preparatory abilities and research experience
   2. Communication skills

(c) Learning orientation of the mentee
   1. Demonstrating critical thinking
   2. Being open to feedback and others’ perspectives

(d) Personal attributes
   1. Interpersonal skills and compatible personalities
   2. Risk taking and self confidence
   3. Motivation
(e) Mentoring mindset of a doctoral student

1. Open to a learning relationship

2. Capability to succeed

**Context of the mentoring relationship.** Understanding the context of the mentoring relationship provides the grounding for the mentoring relationship. The three subthemes that emerged from the analysis were structure, process, and results.

**Structure.** The mentoring relationship between a faculty member and a doctoral student has a structural framework. Within this structure, there are certain benchmarks that are formal, which include university, program, and mentor expectations that must mark progress toward the degree for the doctoral student.

Although the structure of the mentoring relationship may imply something rigid, the structure still varies, somewhat, in response to the student’s needs. P8 described her experience of the mentoring relationship structure as contractual, yet it varies with each student:

There are goals that may or may not be explicit. We kind of have to make them explicit because of the curriculum. The way we do things they have to hand something in with their objectives for the semester sort of thing. So, it’s like a contract and it’s negotiated. Some students want to meet with you weekly, some don’t. Umm and of course that can change over time.

P6 referred to these formal goals as “hurdles or steps” and stated that the university has “checks and balances along the way”, and included “I think there’s probably hallmark steps that we build in as corrections and as progress indicators like advancing to candidacy, but that’s not really all of it. There’s a lot that goes on before and after that.”

P8 said that making progress is equally important, adding:

The format is that the student has produced something and has given it to you. Ideally, they’ve given it to you beforehand and you’ve read it beforehand. But
whether or not that’s true, they’ve produced, you’ve critiqued, and you explain your critique.

P7 explained that each mentoring relationship takes on its own structure. She helps the students in an advising capacity, such as meeting with each student at the beginning of each term, helping them get the courses they need, and providing them with information about program requirements, checklists and prerequisites, stating, “So, after I guess you get a basic framework for what is necessary to do within the university expectations, then the mentorship takes its own course.” P5 held a similar view:

It can take a lot of forms. A student can come by every other day to chat and report on what he or she has accomplished, or can come by once a month. It can really vary quite a bit. It depends on the person. And as long as progress is being made, I wouldn’t say it’s necessary for students to report in with any particular frequency.

Many research participants explained that being available to each other and having meetings or some sort of contact on a regular basis were important. P2 pointed out that access to each other, meetings, and deadlines were extremely important, stating, “Accountability is huge.” Flexibility with the mentoring structure that is responsive to the mentee’s needs is important to P4, who shared the following:

We have regular points of contact, so in my case that means we schedule weekly meetings with the understanding that we’ll easily be able to keep two or three each month, but if we miss one it’s not a big deal because we’re meeting so frequently. And then to be able to be available as needed if something comes up, so not everything, not every problem arises right before our 1:00 meeting on Monday. You know, something happens on Thursday or Friday that we need to figure out, I don’t think it should wait until Monday. So, that’s kind of the flexibility.

P6 recognizes that some students require more structure than others when it comes to mentoring, and noted that some may need to simply touch base with the mentor on a weekly basis, while others may need more intense mentoring:
It may not be they need a weekly appointment of 90 minutes or two hours. But, they need three hours of critical thought time every other week, or five hours of critical thought time… blocks of time every other week as they’re considering the best methodology to use or the best research design. So I think the structure varies greatly.

In response to the varying structure, P10 helps each mentee make an outline for his or her research project that includes an organizational structure. The following is the explanation he provides his students:

Here’s the project you’re going to do. Within this amount of time you’re going to have to have a proposal. Then we’re going to be doing research, okay? Then at that point, we’ll try to get publications, etc. so there has to be kind of a structure.

These benchmarks or checkpoints create a framework for the mentoring relationship. However, there is an individualized process that guides the doctoral student to each benchmark.

**Process.** Although the structure of the mentoring relationship is responsive to student needs, there are certain static goals that must be met. The process of the mentoring relationship between a faculty member and a doctoral student may be an informal, evolving process. Yet, the process, like the structure, is responsive to the mentee’s needs. P9 described the process as lengthy. He explained, “There’s a long journey that the person has to take as such. We have them faced in the correct direction, moving down that path of their journey and such, and recognize that it can’t be done over night.” Even though the mentoring process takes a long time and is more fluid than the mentoring structure, there are certain phases that seem to occur as the mentoring relationship takes its course. At the beginning of the relationship, P3 explained that she takes a more hands-on approach:

Usually when they start out, of course they’re a little more dependent on you, the
mentor, to you know actually tell them what they are going to do, outline things for them, tell them how things are going to be.

P4 referred to this phase as a “nurturing phase” where “You’re sort of building their confidence, building their skills. Giving them small challenges to push them and show them they can do it.”

P1 viewed the process similarly and stated, “They start on the right track, they take classes, they choose a project, something they can do in that so they will be about the lab. Then they read literature and I introduce them to people.” P1 also described a transition in the mentoring process to a more collegial relationship, which helped to mark the progression through phases:

Then they get to a point where they can write in a style that can be published without you editing it. They’ll never be at the same level because you will always have more experience, though they can be scholarly.

As other participants described the transition from the “nurturing” phase, they mentioned that the relationship is more about feedback and discussion, rather than teaching. P8 explained:

And so, the student has to come up with a concept paper and so forth. So, that’s where you really get down to work and start that cycle of feedback. But still, it’s not as intense until well it just sort of from there on it just sort of gets gradually more intense or you know, more meetings or more a little more of everything.

P3 described the transition in a similar way and said the following:

At first you interpret the data with them and then once they get practiced on that, then they will find papers on their own to read, they’ll come up with ideas. Then we’ll talk about them and then maybe modify them and then they can go back into the lab and do the experiments and then they’ll interpret the data by themselves and then come and tell me how they interpret it and we’ll discuss it and then eventually they come up with things on their own and interpret things their own way and then I just kind of critique it at that point.
As the mentoring relationship progresses, the faculty mentor encourages the doctoral student to become more independent and autonomous. P6 stated that he tries to push his mentees to do more than what is required and noted “I think that’s part of the steps of mentoring is having them understand and get out of their comfort zone to become a scholar, to become somebody that exceeds what they could do when they came in.” P10 stated that from the beginning he tries to prepare his mentees for careers. He explained:

My first thing is just how do I get them to do research that can get them publications, okay? And get them to start thinking in such a way that they can develop good quality scientific research. That will lead to the publications, that will lead to their jobs.

With a similar view, P8 stated:

And then there’s a little bit of [mentoring] toward the end also, moving into the “what do I do next” advising in terms of “do I do a postdoc, do I go for a faculty position, where do I go” and that sort of thing.

One aspect of the relationship for which most of the participants agreed was that there is no real conclusion to the mentoring relationship, there is yet another transition. P2 described it in a familial way and stated that “The relationship between a mentor and a mentee never ends. Never. Um, they become academic children. It becomes more distant. They don’t need us.” P9 echoed this statement and said, “It’s kind of like a parent. You sign on for the role for the rest of your life whether you like it or not.” P3 explained that her students still ask for her opinion, “Well, I mean it’s not really a conclusion. I still hear from my old students all the time… they call me and they, you know, they want to know what to do about something or other.” P1 also hears from her students and stated “There is never real closure because you’re always keeping in touch (you are still in their orbit).
They need recommendation letters, etc.” P9 described the relationship as evolving past graduation. He explained:

The point I’m trying to make is it goes way past the time when they graduate, I think. And then students always know that they have someone they can ask for advice with or you know as they move through different challenges. I have students who will call me and you know “what should I do about this” or “what should I do about that” and you know most like I’ve probably seen the same thing and can at least give them some type of input.

As the doctoral student mentee advances through the program and mentoring relationship, the structure and process of the relationship provide the framework and for fluid progression. One of the transitions the mentoring relationship makes involves the results of the mentoring relationship.

Results. Within the mentoring relationship, there are identifiably positive outcomes for the doctoral student. The most obvious outcome is achieving the doctoral degree, which most of the research participants mentioned. Additionally, being able to think critically is of critical importance. P8 stated, “So maybe the outcome is learning to think critically might be another one.” Along the same lines, P6 explained that one outcome was “the ability to synthesize and critique what they couldn’t before. Not necessarily accept everything as fact, the ability to trust someone else to give you honest appraisal of your work, and, the ability to give that to other people.” Similarly, P10 provided the following:

The ultimate thing is that it allows you to make a big advancement in your thinking and in particular, if it really works well, thinking about society as a whole and how you can keep going through and fulfill all your likes or fulfill all your needs and still one of those being number one, basically helping out and fitting in and helping future society.

From the mentors’ perspective, another positive mentee outcome was gaining the ability, skills, and confidence to begin a career in the mentee’s field. P6 stated that an outcome
was “the ability to have confidence in their contributions to the profession.” Similarly, P4 stated, “I think in some sense the outcome of the mentoring process for the student is that they have the ability and confidence to begin a career. Or, I guess go to the next step, which might be a postdoc.” Along the same lines, P5 stated:

I think the most viable thing is just the skill and the resources to be able to solve, in our case, engineering technical problems… the ability to tackle problems that particular content and that’s so important. Although the student should be a leader in his or her field upon graduation… in his or her particular small area of expertise.

In summary, the theme of the context of the mentoring relationship includes the formal structure of the mentoring relationship, informal and evolving mentoring process, and outcomes for doctoral students. As the mentor and mentee advance through the mentoring relationship, the mentoring structure provides benchmarks and a flexible framework in which the progression of the fluid, evolving mentoring process takes place. The structure and process varies with each mentee, but there are also similar outcomes for the doctoral student that are facilitated by the mentoring relationship, which include attaining the doctoral degree, critical thinking skills, and advancing in the chosen field of inquiry. Although structure, process, and results provide the context for the mentoring relationship, there are certain mentee characteristics that contribute to the success or effectiveness of the mentoring relationship. The following themes begin to delve into the concept of the doctoral student’s mentoring mindset.

**Basic knowledge and skills of the mentee.** This theme emerged as an important characteristic of the doctoral student because it is an instrumental part of helping the mentoring relationship to progress more quickly through the nurturing phase. Within this theme, the following subthemes emerged: (a) preparatory abilities and experience; and
(b) effective communication skills.

_Preparatory abilities and research experience._ Basic preparatory abilities and research experience help a doctoral mentee to progress through the program and mentoring relationship more fluidly rather than spending semesters in remediation. Whether it is learning laboratory skills or taking program specific coursework, a doctoral student who has background knowledge and experience is one who seems to be more prepared for the mentoring relationship. P4 credits being able to accomplish the goal of completing the doctoral program with having basic knowledge and experience. He explained, “I think it’s somebody who’s open and prepared and has the skills to accomplish their goals, which typically is completing a masters or Ph.D. thesis.” P10 concurred and provided the following:

That’s what actually makes a really good student. Where they start out kind of apprehensive, but still have good logic, good skills. Whether it be math or ability for experimental design. And then they all of a sudden start applying it so by the time they leave here, they’re already thinking stuff like “you know, we ought to do this.” “Hey, you’re right. That’s a great idea.”

P9 stated that a student who has background skills and experience understands what the academic expectations will be like. He said:

I don’t expect many of them to know a lot about graduate school when they come into it. But, they could have shown demonstrable traits like having worked in research or in a lab while they were in undergraduate. These are key facets that help tell us that, all right, the student has some idea of what they’re getting into. We almost never, I can’t remember taking a student that didn’t have some background or some research background.

P4 had a similar view regarding doctoral mentee experience:

I think the other part of that is they’re going to have to have some relevant experience…And now we’re seeing a lot of kids who are doing undergrad research, research experience for undergrads during the summer, those sorts of things, so I think they come with some of those experiences, they know what they’re getting into and they’re more open to the mentoring relationship.
A student who has acquired background knowledge and research experience is ideal, but one who does not have these abilities and experience may not be as prepared to be mentored. P10 added:

I will get some students that don’t necessarily have the good scientific logic yet. They don’t necessarily have a general direction in their science. The unprepared student is one who doesn’t have good scientific methodology. Background to a certain extent is important, but as long as you have good scientific method and logical thinking, you can apply that to any area.

Although background experience may help the doctoral mentee to be more prepared for the mentoring relationship, the next subtheme, communication skills, is an equally important characteristic for the doctoral mentee to possess.

*Communication Skills.* This subtheme emerged from a need for the doctoral mentee to actively listen to faculty members and colleagues as well as effectively communicate his or her research. Listening to one’s mentor and colleagues is an important part of research. However, listening and reacting to what the mentor has to offer is an integral part of being an effective communicator. In order to benefit from what the mentoring relationship has to offer, the doctoral mentee should pay attention to his or her mentor. P1 stated, “Okay, if you’re going to benefit, you have to listen.” P5 echoed this statement and added, “I like it when the student listens well and takes notes, if that’s necessary. Actually, seriously considers the suggestions that one makes.”

Written communication skills are an integral part of communicating at the doctoral level. Academic or technical writing is a difficult skill, P8 stated:

You don’t have to be the most brilliant student, but boy it’s much nicer if they have good written communication skills. It just…things go so much faster and smoother if the student knows or at least knows mostly how to write, not totally.
P7 took communication further, and stated that it was important for a doctoral student to be “Somebody who articulates insights, asks good questions.” P5 held a similar view and noted the following, “My highest criterion on the practical side is can they write a decent English sentence, which is hard to find anymore. Although I’d say organizing one’s ideas on paper is probably more important than constructing a good sentence.”

Not only does the mentee need to be able to communicate with the mentor, but must also be able to communicate the research effectively within the research community. P5 provided the following:

So one has to be able to see beforehand what is going to make an interesting story and then if it doesn’t work out, to modify it so that it will and does. You need to be able to tell a story in the end that is of interest to other people in your field. Tell them something they don’t know already.

P10 also stated that communicating effectively was important because doing the research and making progress is not enough. The doctoral mentee must be able to convey “the significance and the importance of that science to society.” Part of communicating the significance of the science is through teaching, which is why he encourages his doctoral students to teach. He added:

You have some students that just hate teaching and I understand. Because believe me I was a hundred times more nervous talking to people than any of them were. It’s just gradually you get used to it. And that could be one reason why you hate teaching, but once you get over that I think you get a good, positive feedback from the fact that you’re conveying that information, but it gets to the point where the reason why scientists had problems in the past is because the scientists can’t communicate with normal society. And so I think it’s really important to get the students into the classroom so they know how to expound on the significant aspects that people and i.e. society will pick up on and say, “hey that is pretty important.”
In sum, faculty mentors perceived that basic knowledge and skills such as preparatory abilities, research experience, and effective communication help the doctoral mentee to be more prepared for the mentoring relationship.

**Learning orientation of the mentee.** This theme emerged because of a need for the doctoral student to learn. A successful doctoral student must possess a learning orientation, not just a desire to achieve formal, specific program benchmarks. The subthemes that emerged within this theme included the following: demonstrating critical thinking and being open to feedback and others’ perspectives.

*Demonstrating critical thinking.* Critical thinking is a fundamental skill that is needed in order to be a successful student and mentee in higher education. As the level of education pursued goes higher, the need to utilize critical thinking skills intensifies in order to solve problems. Stepping out of one’s comfort zone to look at all possibilities helps a doctoral student to view research problems critically. P6 stated that being open to new ideas is about “Being flexible, so that they don’t say well there’s one and only one way to do this because I’ve always done it that way.” An important aspect of critical thinking is being able to take what he or she has learned, synthesize it, and apply it to a research problem. According to P7, a student who has a learning orientation is

Somebody who is organized, who does the reading, does the work, applies themselves, shows up to class, completes all assignments, is able to relate other texts to texts, many texts to texts, films to texts, experiences to texts. Is able to trace theories from seminal works into neotheorists…makes connections between theory and practice, sees uh interdisciplinary connections…can look at obstacles and limitations in studies as well as positives and I don’t know what to call them but I guess good points or possibilities.

Being intellectually curious also lends itself to critical thinking, which may then help that student to be open to mentoring. P8 stated the following:
You know a thing I end up writing about students in letters of recommendation that when I really think they’re great is that they have a lot of intellectual curiosity. So, if I sense that, then I think you know we’re going to get along good.

P5 said that imagination is also a part of intellectual curiosity and problem-solving, adding:

Then one does some imagination to see one’s way around problems to see what’s of interest and what’s new and what’s in the data one has before one. Following leads in experimental work is knowing what direction to take an experiment is really quite an art. That I think is what makes a good experimentalist.

Critical thinking skills help the doctoral mentee to process the information and understand research concepts. Additionally, being open to multiple perspectives, may help the doctoral mentee to contribute an informed position during academic discussions.

Being open to feedback and others’ perspectives. A doctoral student who is open to the mentoring relationship is, in the most basic sense, open to feedback and appreciates other perspectives. Seeing that others have perspectives that are valuable to the problem solving process and utilizing suggestions and advice from those who may provide an expert role or fresh eyes on the subject is an invaluable trait of a mentee. P1 suggested that a doctoral student should “Take the opportunity to learn from anybody in the lab who has something of knowledge that they don’t…appreciate the experience the mentor has so that they can…let them (the mentor) advise and help you.” The doctoral student not only needs to be open to feedback, but also needs to be able to contribute to an academic discussion. P5 stated that a doctoral student who has a learning orientation “at least remembers what you said and reacts to it and comes back with some comment or evaluation of what one is suggesting. It works both ways.” P6 noted that being a doctoral student means being an active learner; he stated, “But this is all about learning-thinking,
you know? So, there’s a need to be able to accept new ideas and some are not quite there yet.” He also provided the following example:

Like in our field, it’s really big that they take a…they are open to multiple perspectives: the community resident or patient’s perspective, the service provider’s perspective, the insurer’s perspective, the work site administrator’s perspective. They have to understand all of those if they’re planning health promotion. You can’t just plan it from an advocacy patient standpoint, you can’t just plan it from a service availability or restriction standpoint from cost containment. You’ve really got to understand multiple perspectives so that you can come to some consensus…I think it’s that openness that we’re looking for, and that’s our job to kind of encourage that.

Although being open to feedback, including criticism, and other perspectives is important with regards to a learning orientation and being open to mentoring, the antithesis is a doctoral student who believes he or she has nothing to learn. P7 described this type of student as “Somebody who does not complete assignments, who does not show up for class, who is not able to make any kind of connection between theory and practice or text and texts, and text and film…” P1 explained that this type of person is “a person who doesn’t think they have anything to learn, then that’s a big problem.” P5 posited that these types of mentees “won’t participate in a collegial relationship…and make progress and come back with ideas and react to one’s suggestions.” P7 concluded that this type of student “has a very rigid form of what education is and is not open to innovation or openness to thinking about entertaining other thoughts or other’s thoughts.”

Another form of student who does not think he or she needs to learn anything is one who thinks he or she already knows everything. P6 noted:

Occasionally certainly in fieldwork or in practicum, you often, not often but sometimes have to have a “come to Jesus meeting” between them and the facilitator because they want to tell the agency to change everything that it does. That’s not somebody who’s really open to mentoring. Because they’re not there to learn, they’re there to impress or to tell somebody how to do things.
P8 explained that these types of mentees “think they know everything already. They’re not open about expectations, they sort of approach it like you work for them.” She recalled the following example:

I’m thinking of a person who already has a professional degree, doesn’t live in the area, actually this person already has a faculty position. Not here, but somewhere. And just wants you to read things and sign off on them. And if you try to give them feedback, they’re just not willing to hear it. That is a real aggravating situation [laughs]. Because it almost makes you adversarial and that’s the last thing you want. So that’s one example. Another example might be…well, you know there are almost always people who think they know something that they don’t. And, they think they do, but when you look at it they haven’t thought through it.

P2 stated that this type of student is difficult to handle, but it is incumbent upon the mentor to inform the student. He said,

They cannot know it all. I think it is the job of the mentor to mention to the student “this is a problem, okay?” And I do that all the time. They need to be receptive. There’s got to be a trust issue.

To summarize this theme, the faculty mentors perceived that a doctoral mentee must have a learning orientation, which includes good critical thinking skills as well as being open to feedback and other perspectives. A doctoral mentee who thinks that there is nothing to learn or thinks he or she already knows everything will not be prepared for or receptive to a mentoring relationship.

**Personal Attributes.** The doctoral student’s personality is not only an integral component of the mentoring relationship between the faculty mentor and doctoral mentee, but also affects the relationship between the doctoral student and his or her cohort peers. The following subthemes emerged within this theme: Interpersonal skills and compatible personalities, risk taking and self-confidence, and motivation.
Interpersonal skills and compatible personalities. Being part of a mentoring relationship and being part of a doctoral cohort requires interpersonal or social skills because working on research is a team effort. Social skills help doctoral students to be interactive, collaborative and engaged with each other. Further, being part of a mentoring relationship means two personalities have to work together. This does not mean that they have to be the same. It means that the personalities should be compatible. P1 explained, “You’ve got to have, somewhere this ought to go, you’ve got to . . . your personalities have to match. And I don’t know where you want to put that one, but that’s really important.” P2 also pointed out that the personality is an important part of making the mentoring relationship work, and stated, “Intellectually, we train them I mean training is the easy part. We question and I challenge them, but the personality, that makes a difference between a teacher and student relationship and a mentor/mentoree relationship.” According to P5, the mentee should also be aware of the mentor’s personality. He explained:

I think it’s a, I always thought that one had to choose not only the topic of the mentor, potential mentor, but the personality of the mentor. You want to make sure that you’re going to be compatible with that person’s style.

A mentor’s style also lends itself to the way he or she mentors each student, but takes into account the way each student learns. P3 provided the following examples:

So you know I had one student that graduated recently that was very, he was very stubborn. I guess that’s the word I would use. I mean, so he would, I would suggest something to him and he would argue with me about it and we would argue for a while, but eventually we would come to the conclusion of what should be done and how it should be done and what course to take. But, he really needed to have that argument period, which is fine. I don’t have any problem with that. And there was a couple times he would argue with me about the way to do something and I would just be like “fine, go ahead, do that.” He would go and do it, it wouldn’t work. And then he would come back and say “well, it didn’t work” and I was like “well, [laughs]…you know.” So that was fine because that’s how
he learned. But then I had another student who was you know very shy, actually, and came from a culture where you don’t really question authority and so she would just do everything I told her to do without question or without discussion. And so with her it was a little different because I had to get to the point where I would say to her “you know sometimes when I tell you to do something, it’s stupid.” [laughs] You know? “If you think what I’m telling you is not right based on something else you know, let me know. And you know because you may have information that I don’t have. Because you’ve actually been in the lab working on this project. Don’t just . . .” So eventually she would, it was difficult, but eventually I would tell her to do something and she would be like, “I already did that” [laughs]. “It’s not going to work.” So I think in the end there has to be some discussion. I don’t know how else to put it.

P10 also stated that the mentor should take into consideration the mentee’s personality when mentoring, and said the following:

But one of the things that I’ve seen as a fault in other mentors, or maybe not a fault, I’m not sure, is you also have to identify with the student and treat that student as an individual. And really try to nurture their scientific career based on their personality.

Interacting with the mentor is crucial to the mentoring relationship. Additionally, being able to interact with the other mentees can be crucial, especially in a laboratory setting where the mentees must interact and collaborate with each other on a daily basis. P6 explained that the doctoral mentee must be “willing to collaborate with faculty and other students and learning groups, that’s really important.” In order to assess if a student has interpersonal skills and can interact effectively with others, P2 brings his students together in a social situation:

I always check them when they interact with others. I immediately take them to lunch. I usually have like three or four gatherings of my team at the house. They come, we cook together. They think it’s just to be fun. And I’m just checking them out in how they interact with each other. You know, I do a lot of personality testing at home. They have some wine and they start cooking or those who do not cook and say, “No, I’ll help with the dishes.” I’m watching, I’m seeing what they’re doing. You know this student who stays in a corner and doesn’t talk much
and doesn’t do anything and doesn’t engage. You know, it’s going be an issue because he’s not going to be a team player somehow somewhere. You know so you pick up on that. I test them in a social environment a lot. Especially at the beginning.

Because P2’s mentees will be spending large amounts of time together, he wants to make sure that they have the characteristics to be engaging and added,

When you interview them, they do not use “I”. They say things like me and my friends or me and my parents or me and we, us. Very little “I” did this and “I” did this and “I” did this. Because the moment they go into this I,I,I, I see a yellow flag right there. Chances are this person is not a team player.

One reason it is important for the mentees to be interactive is because each student may have more experience or proficiency when it comes to different facets of research or research methods. P3 explained:

Yeah, so each student has a different set of skills. They have a certain basic knowledge, but then each of them have expertise in a different area. Based on what their project is. So, we try to work their project. You know, things are going wrong and you realize they have skills in a certain area and you kind of try to push their project in that direction. And then also, the other neat thing about, at least my lab and I think other labs are like this, is it is true that each student does have a little bit different expertise, so they actually interact with each other, so they kind of mentor each other in a way, or help each other out.

Interpersonal skills and compatible personalities are important personal attributes because of the interactive and collaborative nature of research. Other personal attributes, such as risk taking and self-confidence help the doctoral mentee to understand the research process.

*Risk taking and self-confidence.* The doctoral student who is willing to be vulnerable and accept failure and rejection would be considered a risk taker. Often at the doctoral level in graduate school, the doctoral students in a cohort are the best of the best; many of whom have never received a failing grade or failed by any definition of the word. A doctoral student must have a can-do attitude. A doctoral student who does not
believe in him- or herself may not possess the fortitude to push forward through difficult
times during the doctoral program and the mentoring relationship.

A willingness to try new things is part of conducting research. P6 suggested that a
doctoral mentee should be “willing to try new things, even if it’s not something they’ve
done before.” P4 wants his students to try new things, but also wants them to understand
that there may not always be a positive outcome, and stated, “I think from the perspective
of the student, you want them to be willing to try new things, be willing, I think that
means be willing to fail. Not everything works. Be able to accept failure and rejection.”
Being able to accept failure means that the student must be willing to be vulnerable so
that the mentor can provide support and guidance for the mentee. P2 provided the
following:

You want a person who can allow himself or herself to be human and vulnerable. Otherwise, there’s no way you’re going to be able to correct. You’re not going to
be able to fix. I mean these relationships are about check this fix that, or I don’t
think you are doing this right. You’ve got to, you know, you’ve got to be able to
have a recipient.

P6 held a similar view and said, “I think letting your guard down a little bit. It’s okay for
them to show they don’t know everything about everything and it’s okay for us to show
the same thing.” P5 suggests that failing is a part of research, so the doctoral student must
have patience in order to continue. He explained:

Experimental work or simulation work can be very discouraging because one can
go for a long period of time just failing over and over and over again, so patience
is necessary. Personality that doesn’t allow one to get completely discouraged and
give up when things aren’t going well.

If the doctoral student is not experienced in failure, then there may be problems with
progress. P4 shared the following example:
You know one that I’ll put out there is they’ve never failed before. These bastards are smart as hell. And they’re getting A’s in everything. And 1600s on the GREs and they’ve never failed. And it’s really interesting to watch a kid. Not fail in the absolute sense like “Kellie, you just don’t cut it, get out of here.” But, you know experiment doesn’t work. Their first time in qualifying exam, they didn’t pass. They’re not getting you know they’re getting 10, 12, 15 admission letters when they apply to grad school and that success thing kind of flips because they’ve skimmed off the top of the pond. We’ve skimmed off the top of the pond. You watch a kid that has straight A’s you know go into a class where there’s no hangers-on and the 1.1 GPA kids in the class anymore. They don’t exist in graduate school. You watch all these kids who’ve all only ever had an A in their life get a C in a graduate course. It freaks them out. So I think that’s something. Yeah, so if they’re not ready to fail, they’re not prepared. At some point in our lives we’re going to hit a ceiling.

Risk taking and self-confidence are key characteristics of a doctoral mentee who is prepared to be mentored and to progress through the doctoral program. However, motivation helps the mentee to maintain a high level of progression during the mentoring relationship.

Motivation. The doctoral mentee must be motivated in order to successfully progress through the mentoring process and program of study. Self-motivation or internal motivation may provide the impetus to continue through failures and to envision a successful outcome. P4 noted, “So I think part of a good relationship or a good mentoring relationship, is having people who want to do it…So I think you have to, you know it comes back to sort of understanding what they want.” P3 described the following, “They have to be motivated, they have to be motivated in some way. And you know sometimes I can motivate people, but sometimes you know they have to be internally motivated.” P4 echoed this statement and explained, “Graduate school is about finding an important problem and solving it yourself. Being the first one, and so you have to have that sort of passion and drive.”
Part of being motivated is having interest. The mentee has to want to be a part of the mentoring relationship. The mentee must also be interested in his or her research, which may provide the motivation to progress through the mentoring relationship. P8 explained:

Well, the first one is excited about their topic, I mean that’s got to be there. They have to be non-defensive… I’m thinking back to my past students. They have to have um they have to be committed. You know, make the commitment to work with me. They have to be assertive and hardworking.

P9 had a similar view regarding motivation, speaking of “four pillars” his mentees needed in order to be successful:

First, characteristic—they have to be interested in what they’re doing. They have to be interested. They have to have a work ethic. Lazy people will not succeed. They have to have common sense. And I’ll take common sense over book smart any day of the week. And they have to have to be ethical, I don’t know how you would say. They have to have ethical traits and such. We can’t have people who are willing to cut corners and cheat to get to their answer. So, those are four pillars that I have that I think makes for very, very successful students. And if the student is missing any one of those, they won’t be successful.

P10 also spoke of the importance of having interest, not only in a topic, but also in advancing science in society as a whole:

I like personally one that is more interested in the science and making significant advancements in the science rather than simply I want to get a Ph.D. and get a job. It’s very typical. I see that . . . I have some people in the past who just want to be lab rats. They’ll be in there all the time just doing stuff. They’ll do the assay six different ways to try to get it to work well. And I have other people saying, “hey let’s buy a kit”, I want to get this over with because I want to get my degree and get out of here. And it’s important that they can do that because there’s a practicality aspect of it. But at the same time, the person that I think we want out there in society is the one that they can do both. Where they can make the deadlines, they can, but their purpose is for more the science than simply the advancement or simply the Ph.D. behind their name.

While motivation is important in a mentee, there are certain motivations that are undesirable. One of these motivations is trying to progress through the program as
quickly as possible. P8 explained, “. . . they want the easiest route to the degree and they’re going to try every trick in the book to make that happen. Those people are not fun.” P6 held a similar view:

People who are very worried about getting through a program as quickly as possible, but not necessarily gaining a lot of knowledge. Just gaining a credential, maybe to maintain their current employment, or to get the better position and we try to weed those out during the admissions process . . . really not the best students.

Other participants have had students whose motivation to come to graduate school was because they could not think of anything else to do. P1 stated that this type of student “might be doing it because they can’t think of anything else to do with their lives [or] is not committed to the Ph.D. program.” P10 concurred and added, “They just want to do something, you know I just want to get a Ph.D. I’ve had that before, I just want to get a Ph.D.” P9 suggested that the interest in graduate school may come from being unable to get accepted into a professional program:

Those students who are going to graduate school because they don’t know of other options. That’s probably your biggest problem. Or those who fail to get into a professional school and then look at graduate education as their second option. Those are less likely to be good students.

If the mentee lacks interest, then there may be a lack of motivation. P3 explained:

If they’re not internally motivated to be a scientist, if they’re just doing this because they couldn’t think of anything else to do, then I can get them to go through the motions and they’ll get papers and they’ll graduate, but I don’t know what’s going to happen after that . . . Well, you know I have had students that have not made it through. It wasn’t that they were antisocial or anything, but I mean some, I’ve had students who have not made it through to the Ph.D. And I think in the end it’s because it’s really not what they want to do.

Along the same lines, P4 added:

You know I get a lot of students who get pushed by their undergraduate advisors “hey you’re really smart, you should go to grad school,” which is true. They have the raw capabilities to do well in grad school. But they come and they’re not that
committed, it’s not that interesting or exciting to them. And then they kind of fall back into undergraduate mode.

P7 had a different take on interest and noted, “If you’re not happy about learning something that you’re learning, then why are you doing this? I would hope it’s not for a paycheck. You know, education isn’t a place where you make a lot of money.”

To summarize this theme, the faculty mentors perceived that a doctoral mentee must have a personality that is compatible to the mentor’s, possesses good interpersonal or social skills in order to be collaborative, and allow him- or herself to be vulnerable and prepared for failure. Being motivated is also a desirable characteristic in a doctoral mentee. However, the motivation should not be linked to lack of direction or time to degree.

Details regarding the emergent themes and subthemes from the participant interviews are presented in Table 1. The following theme, mentoring mindset of a doctoral student, details the characteristics that emerged from the answers provided from the reflection question.

**Mentoring Mindset of a Doctoral Student.** After completing the in-depth interviews with each participant, a reflection question was given to the participants. I asked the participant to reflect on our interview and then answer the following question that was typed on a sheet of paper: “After reflecting on our interview, what is your perception of the mentoring mindset of a doctoral student who is prepared to be mentored?” This question allowed the graduate mentors to think and reflect on their experiences with doctoral mentees, which provided another source of data for the study.
Table 1

*Descriptions of Emergent Themes and Subthemes from Interviews*

<table>
<thead>
<tr>
<th>Context of the Mentoring Relationship</th>
<th>Basic Knowledge and Skills of the Mentee</th>
<th>Learning Orientation of the Mentee</th>
<th>Personal Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>Preparatory abilities and research experience</td>
<td>Demonstrating critical thinking</td>
<td>Interpersonal skills and compatible personalities</td>
</tr>
<tr>
<td>• varies by student</td>
<td>• background knowledge</td>
<td>• open to new ideas</td>
<td>• interactive</td>
</tr>
<tr>
<td>• contractual</td>
<td>• academic skills</td>
<td>• synthesizes what is learned</td>
<td>• collaborative</td>
</tr>
<tr>
<td>• responsive to student needs</td>
<td>• relevant experience</td>
<td>• applies what is learned</td>
<td>• team player</td>
</tr>
<tr>
<td>Process</td>
<td>Communication skills</td>
<td>• research</td>
<td>Risk taking and self-confidence</td>
</tr>
<tr>
<td>• informal</td>
<td>• verbal and written skills</td>
<td>• intellectually curious</td>
<td>• vulnerable</td>
</tr>
<tr>
<td>• evolving</td>
<td>• effectively convey research</td>
<td>• imaginative</td>
<td>• learn from failure</td>
</tr>
<tr>
<td>• transitions to independence</td>
<td></td>
<td></td>
<td>• willing to try new things</td>
</tr>
<tr>
<td>Results</td>
<td></td>
<td>Being open to feedback and others’ perspectives</td>
<td>• patient</td>
</tr>
<tr>
<td>• think critically</td>
<td></td>
<td>• contributes to academic discussions</td>
<td>Motivation</td>
</tr>
<tr>
<td>• confidence</td>
<td></td>
<td>• sees multiple perspectives</td>
<td>• interested in research</td>
</tr>
<tr>
<td>• attainment of doctoral degree</td>
<td></td>
<td></td>
<td>• driven</td>
</tr>
</tbody>
</table>

Participants took from two days to four weeks to answer the question and return it to me. All participants returned their reflection sheets and a copy of all the answers returned is available in Appendix G. This theme emerged as a concise collection of faculty mentors’ perceptions with regard to their respective doctoral students’ mentoring mindsets. The subthemes that emerged were (a) open to a learning relationship and (b) capability to succeed.
Open to a learning relationship. Being open to a learning relationship is an important part of being mentored. If the mentee is not willing to learn or open to the exchange of ideas and knowledge with the mentor, then there is no true purpose to the mentoring relationship. After reflecting on the term mentoring mindset, the participants proposed that the mentoring mindset of a doctoral student should include an openness or preparation to learn from the mentor. P1 stated that “they should be prepared to learn from the mentor [and] able to accept constructive criticism.” Helping students achieve a mentoring mindset may help to build the mentoring relationship. This requires the mentee to be open to the relationship. P9 stated, “If the student is prepared to be mentored, then they should enter [with] an open mind. Preconceptions can often lead to problems. My perception is that many of them are very confused as to what to expect.” P2 stated that mentors may need to guide the student to the development of a mentoring mindset and suggested the following:

I think most doctoral students walk into programs thinking that they need to demonstrate to mentors how intelligent, or independent, or hard worker they are or can be. By walking in with such mind frame, they are not prepared to be mentored; their focus is to “show off” rather than to “receive mentorship.” Mentors need to learn to recognize that and help students to develop a mindset of being “mentored.” This requires conversations, time investment and trust.

P3 noted that a student who is prepared to be mentored is “willing to take advice to reach goals. They are generally more open-minded or open to taking advantage of or learning from every situation.” P10 had a similar view stating that a mindset would include being “open to evaluating new ideas [and] enjoy open discussions.” P8 echoed this statement and added, “I think the mindset is humble, inquisitive and open to new ideas.”

Being a part of a relationship that facilitates learning means being able to ask for help and looking for learning opportunities. P7 stated, “Doctoral students who are open to
mentoring and a reciprocal relationship to learn together is what it takes!” P4 held a similar view, stating that a key characteristic for a student to be prepared to be mentored is “openness (willingness to accept all feedback)”. He also added that “the student must have the confidence to ask for help.” P6 suggested that knowing to ask for help is part of learning about research, while going beyond expectations. He explained:

These students are respectful, yet know to request dedicated advising to develop original ideas for scholarship, explore methodologies, learn effective protocol, build needed contacts and engage with study participants . . . Successful mentees accept difficult (and even extracurricular) assignments from faculty members, recognizing that wisdom and capacity emerge through teaching, service and scholarship challenges.

Being open to a learning relationship means being open to a mentoring relationship. The doctoral mentee should approach the mentoring relationship with an open mind instead of preconceived ideas and expectations about the relationship.

*Capability to succeed.* Without the mentee’s desire to succeed and the enthusiasm to complete goals, it would be difficult for the mentoring relationship to progress, which may lead to the mentee’s lack of progress through the doctoral program and a breakdown in the mentoring relationship. Therefore, part of the mentoring mindset includes the capabilities for the student to be successful in the relationship. P3 explained that “A student that is prepared to be mentored is also internally motivated to succeed”. P1 stated that the student should be “excited about the research . . . dedicated and motivated.” P5 suggested that “the student need only be eager to become a full-fledged member of the research community in his or her chosen field.”

Although motivation is an important factor in one’s capability to succeed, there are other attributes a student must have in order to be mentored at the doctoral level. P4 explained that there are certain “key characteristics for a student [who is] ready to be
mentored,” which include “desire to learn—real passion; ability to be reflective; high emotional intelligence. The student must have good self-awareness—what he/she can do well and the ability to recognize the signs when things are not going well.” P10 held a similar view and pointed out that the doctoral mentee needs to have the following characteristics: “energetic enthusiasm toward the field of study; good work ethic; an understanding of the importance of knowledge in society; altruism; and does not quickly jump to conclusions or quickly form opinions.” Although it is important for mentees to have the aforementioned attributes, it is also important that the doctoral student be able to work independently. P7 explained:

A doctoral mentee has to be autonomous. That is to say, as a mentor we cannot be expected to let students know due dates, formatting expectations, or be in our offices when students want us to be here. They have to make appointments, respect our time, and see the program as a process rather than a bunch of hoops to be passed through.

To summarize this theme, the faculty mentors perceived that a doctoral mentee’s mentoring mindset must include being open to a learning relationship by approaching the mentoring relationship with an open mind, as well as having the capability to succeed through interest and dedication to the research. When comparing these subthemes with the themes from Table 1, they can be attributed to two of the major themes: (a) learning orientation of the mentee and (b) personal attributes (see Table 2).

**Interpretation**

After analyzing the data through emergent themes using a modification of the Stevick-Colaizzi-Keen method (Creswell, 2007; Moustakas, 1994), a textural description of what the faculty mentors experienced and a structural description of how the
Table 2

_Emergent Themes from Mentoring Mindset of a Doctoral Student Descriptions_

<table>
<thead>
<tr>
<th>Learning Orientation of the Mentee</th>
<th>Personal Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating critical thinking</td>
<td>Interpersonal skills and compatible personalities</td>
</tr>
<tr>
<td>• not sloppy</td>
<td>• not arrogant</td>
</tr>
<tr>
<td>• open minded</td>
<td>• not a “show off”</td>
</tr>
<tr>
<td>• open to learning</td>
<td>• respectful</td>
</tr>
<tr>
<td>• ability to be reflective</td>
<td>• humble</td>
</tr>
<tr>
<td>• high emotional intelligence</td>
<td>• mature</td>
</tr>
<tr>
<td>• self-aware of what he/she can do well</td>
<td>Risk taking and self-confidence</td>
</tr>
<tr>
<td>• able to recognize when things are not going well</td>
<td>• confidence to ask for help</td>
</tr>
<tr>
<td>• open to new ideas</td>
<td>• accepts difficult and even extracurricular assignments from faculty members</td>
</tr>
<tr>
<td>• inquisitive</td>
<td>• autonomous</td>
</tr>
<tr>
<td>• open to mentoring</td>
<td></td>
</tr>
<tr>
<td>Being open to feedback and others’ perspectives</td>
<td>Motivation</td>
</tr>
<tr>
<td>• able to accept constructive criticism</td>
<td>• excited about the research</td>
</tr>
<tr>
<td>• prepared to learn from the mentor</td>
<td>• dedicated &amp; motivated</td>
</tr>
<tr>
<td>• willing to take advice to reach goals</td>
<td>• not lazy</td>
</tr>
<tr>
<td>• willingness to accept feedback</td>
<td>• internally motivated to succeed</td>
</tr>
<tr>
<td>• knows to request dedicated advising from mentors</td>
<td>• desire to learn</td>
</tr>
<tr>
<td>• cannot be a know it all</td>
<td>• eager to become a full-fledged member of the research community</td>
</tr>
<tr>
<td>• enjoys open discussions</td>
<td>• energetic enthusiasm</td>
</tr>
<tr>
<td>• does not quickly jump to conclusions or quickly form opinions</td>
<td>• good work ethic</td>
</tr>
<tr>
<td></td>
<td>• responsible</td>
</tr>
<tr>
<td></td>
<td>• altruistic</td>
</tr>
</tbody>
</table>

phenomenon was experienced were composed (Creswell, 2007). After the textural and structural descriptions were composed, the essence of the faculty mentor’s experience with the doctoral student’s mentoring mindset was revealed.

_Textural description_. The faculty mentors who participated in this research experienced the doctoral student’s mentoring mindset through the formal mentoring
relationship. The mentoring relationship at the doctoral level has certain university
guidelines and benchmarks that must be met in order for the relationship to progress.
Some students require more structure than others, but the mentoring relationship provides
support and guidance that help the doctoral student to become an independent scholar.

The faculty mentors experienced the doctoral mentee’s mentoring mindset during
all phases and transitions of the mentoring relationship. Those doctoral mentees who
were collaborative team players were able to be more interactive with the mentor and
research colleagues. Faculty mentors described that playing to the mentee’s strengths and
identifying and working on the mentee’s weaknesses in the mentoring mindset helped the
mentoring relationship to progress through the phases.

Faculty mentors expressed that doctoral students who had preparatory skills, prior
research experience, and effective communication skills were more prepared for the
mentoring relationship. Other characteristics such as critical thinking skills and social
skills help the doctoral mentee to interact with the mentor and other researchers or
colleagues in the research environment, which in turn, helped the mentee with intellectual
discussions.

**Structural description.** The faculty mentors who participated in this research
worked closely with doctoral mentees and described their experience with the doctoral
student’s mentoring mindset as a readiness dependent upon the individual student. As the
student progresses through the relationship, the mentoring process evolves to meet the
needs of the student.

Faculty mentors revealed that a learning orientation or desire to learn that takes
the mentee past formal goals helps the doctoral mentee to be more open to a mentoring
A true interest, excitement and dedication in the research are part of the doctoral mentee’s motivation to succeed in the academic program as well as the mentoring relationship and helped the mentee to relate more to the mentor. A doctoral mentee’s personality must be compatible with the mentor’s personality in order for the mentoring process to progress.

The faculty mentors described those doctoral students who did not have a mentoring mindset as students who thought they had nothing to learn or had no desire to learn. If the student lacks interest or is only interested in a short time to the degree, then the student’s mentoring mindset is inadequate and he or she is not ready for a mentoring relationship.

Faculty mentors worked closely with doctoral mentees and described those mentees who were open to the mentoring relationship as being internally motivated. Those mentees allowed themselves to be vulnerable and to take risks. The doctoral mentee’s mentoring mindset provides the motivation and learning capabilities to persevere through failure and rejection.

**The essence of the doctoral student’s mentoring mindset.** The mentoring mindset of a doctoral mentee is a readiness for mentoring that can be described as a developmental continuum of experience, aptitudes, and personal attributes. The more highly developed these mentee characteristics that comprise the mentoring mindset, the more prepared the mentee is for the mentoring relationship and the more poised the doctoral mentee is to receiving the benefits the mentoring relationship has to offer.
Summary

Ten graduate faculty mentors who were faculty members in doctoral granting programs and had received the *Dean’s Award for Excellence in Mentorship* were selected as participants in this research study. Details regarding the emergent themes and subthemes from the participant interviews and reflective questions are presented in Tables 1 and 2.

Upon completion of the data analysis, a textural description of what the faculty mentors experienced and a structural description of how the phenomenon was experienced were written. From these descriptions, a statement of the essence of the phenomenon of the doctoral student’s mentoring mindset was written.
Discussion

The purpose of this qualitative study was to describe and explore from the mentor’s perspective what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor at a Research I University in the Southern United States. Ten graduate faculty members participated in this research study. To be considered for inclusion, individuals had to meet the criteria of having graduate faculty status and be currently serving on dissertation committees. Additionally, each participant had to be a recipient of the Graduate Dean’s Award for Excellence in Mentorship. In order to have received the Mentorship Award, award recipients had to meet the criteria on the nomination form (see Appendix A). It was assumed, therefore, that the participants were experienced and outstanding mentors of doctoral students. The participants consisted of four females and six males from diverse academic backgrounds with different faculty ranks and varying years of experience working in higher education. All but one participant were native English speakers and their years of teaching in higher education ranged from 11 to 25 with an average of 20.1 years. Because the research focused on faculty experiences with doctoral mentees, each participant was affiliated with a graduate program that awards doctoral degrees.

The following definition of mentoring was used throughout this study: The guidance and support provided by a faculty mentor in an official capacity to help the doctoral student achieve the technical and intellectual skills to complete the dissertation as well as develop psychosocial and career aptitudes in order to achieve professional self
reliance (King, 2003; Kram, 1985). This research study was guided by the following central research question: “What constitutes a mentoring mindset in a doctoral student who is being mentored by a graduate faculty mentor?” Research subquestions to guide the study included the following:

1. How do faculty members describe the process of mentoring doctoral students?
2. How does a faculty mentor describe the characteristics of a doctoral student who appears to be poised to benefit from a mentoring relationship?
3. How does a faculty mentor describe the characteristics of a mentee who does not seem to be poised to benefit from the mentoring relationship?
4. How does a faculty mentor describe the mentoring mindset of a doctoral student who is ready to be mentored?

For this research study, I chose a transcendental phenomenology approach because it allowed me to experience and fully explore what constituted the phenomenon of the mentoring mindset of doctoral students from the faculty mentors’ perspective. In transcendental phenomenology, the term transcendental refers to “what can be discovered through reflection on subjective acts and their objective correlates,” while phenomenology refers to utilizing “only the data available to consciousness—the appearance of objects” (Moustakas, 1994, p. 45). Therefore, transcendental phenomenology places emphasis on subjectivity and the researcher’s discovery of the essence of experience, which provides a framework for deriving knowledge (Husserl, 1975, as cited in Moustakas, 1994).

In this chapter, I discuss the major findings of the research as well as the overall significance of the research and implications for future studies.
Major Findings

The mentors, from the fields of arts and sciences, education, biomedical sciences, engineering, health professions, and public health, were willing to be interviewed regarding their experiences as mentors, although some had mentioned that they had never reflected on that role. Each mentor had little difficulty in identifying the traits of mentees who were poised to benefit from mentoring, as well as identifying traits of those who were not ready. Upon the completion of the data analysis from the participant interviews and reflection statements, the following major themes emerged: (a) context of the mentoring relationship; (b) basic knowledge and skills of the mentee; (c) learning orientation of the mentee; (d) personal attributes; and (e) mentoring mindset of a doctoral student. Additionally, subthemes emerged within each theme.

Basic knowledge and skills of the mentee. Doctoral mentees who already have basic academic knowledge and skills in their graduate field of study are more prepared or ready for the mentoring relationship. These basic skills and experiences are important for the doctoral student to possess, because they are instrumental in helping the mentoring relationship to progress more quickly through the beginning phase. One engineering doctoral mentor referred to this phase as a “nurturing phase” in which “You’re sort of building their confidence, building their skills. Giving them small challenges to push them and show them they can do it.”

Preparatory abilities and research experience. Doctoral mentors conveyed that basic preparatory abilities and research experience help a doctoral mentee to progress through the program and mentoring relationship more fluidly, as opposed to needing semesters in remediation. Whether it is learning laboratory skills or taking program
specific coursework, a doctoral student who has background knowledge and experience is one who seems to be more prepared or ready for the mentoring relationship than one who does not have these abilities and experience. One arts and sciences doctoral mentor stated that a student who has background skills and experience understands what the academic expectations will be. He said:

I don’t expect many of them to know a lot about graduate school when they come into it. But, they could have shown demonstrable traits like having worked in research or in a lab while they were in undergraduate. These are key facets that help tell us that, all right, the student has some idea of what they’re getting into. We almost never, I can’t remember taking a student that didn’t have some background or some research background.

The faculty mentors stated that a mentee who acquires these basic skills and experiences at the undergraduate level will understand what to expect at the graduate level. However, if the doctoral mentee is lacking in these areas, the student may not be as prepared to be mentored. An arts and sciences doctoral mentor explained:

I will get some students that don’t necessarily have the good scientific logic yet. They don’t necessarily have a general direction in their science. The unprepared student is one who doesn’t have good scientific methodology. Background to a certain extent is important, but as long as you have good scientific method and logical thinking, you can apply that to any area.

Therefore, a doctoral mentor really appreciates a mentee who comes with the prerequisite knowledge and skills of the discipline, and is ready to launch to the next level.

Communication skills. Faculty mentors conveyed that there was a need for the doctoral mentee to actively listen to faculty members and colleagues as well as effectively communicate his or her research in academic and professional settings. Listening and reacting to what the mentor has to offer is an integral part of being an effective communicator. One biomedical doctoral mentor stated, “Okay, if you’re going to benefit, you have to listen.” An engineering doctoral mentor echoed this statement and
added, “I like it when the student listens well and takes notes, if that’s necessary. Actually, seriously considers the suggestions that one makes.” In order to fully benefit from the mentoring relationship, the doctoral mentee should pay attention to the experience and insights the mentor has to offer. The faculty mentors in this research study stated that the doctoral mentee must have good written and oral communication in order to be able to communicate his or her research effectively within the research community. An arts and sciences doctoral mentor stated that communicating effectively was important because doing the research and making progress is not enough. The doctoral mentee must be able to convey “the significance and the importance of that science to society.”

**Learning orientation of the mentee.** Faculty mentors communicated an important need for the doctoral student to learn. They stated that a successful doctoral student must possess a learning orientation, not just a desire to achieve formal, specific program benchmarks. Included within a learning orientation are a doctoral mentee’s critical thinking skills, and being open to feedback and others’ perspectives.

*Demonstrating critical thinking.* Critical thinking is a fundamental skill that is needed in order to be a successful student and mentee in higher education. As the student pursues higher levels of education, the need to utilize critical thinking skills intensifies in order to solve research problems. Stepping out of one’s comfort zone to look at all possibilities, as well as remaining open to new ideas, helps a doctoral student view research problems critically. An education doctoral mentor stated that being open to new ideas is about “Being flexible, so that they don’t say well there’s one and only one way to do this because I’ve always done it that way.” Faculty mentors stated that the doctoral
mentee should be able to take what he or she has learned, synthesize it, and apply it to a research problem. Intellectual curiosity and imagination are also components of critical thinking and are appealing characteristics to mentors. Critical thinking skills prepare the doctoral mentee to process the information and understand research concepts. Additionally, being open to multiple perspectives will help the doctoral mentee to contribute an informed position during academic discussions.

*Being open to feedback and others’ perspectives.* A doctoral student who is open to the mentoring relationship is, in the most basic sense, open to feedback and appreciates others’ perspectives. One biomedical sciences doctoral mentor suggested that a doctoral student should “Take the opportunity to learn from anybody in the lab who has something of knowledge that they don’t…appreciate the experience the mentor has so that they can…let them (the mentor) advise and help you.” An education doctoral mentor noted that being a doctoral student means being an active learner; he stated the following, “But this is all about learning-thinking, you know? So, there’s a need to be able to accept new ideas and some are not quite there yet.”

Although being open to feedback, including criticism, and to other perspectives is important with regards to a learning orientation and being open to mentoring, the antithesis is a doctoral student who believes he or she has nothing to learn. A public health doctoral mentor explained that these types of mentees “think they know everything already. They’re not open about expectations, they sort of approach it like you work for them.” She recalled the following example:

I’m thinking of a person who already has a professional degree, doesn’t live in the area, actually this person already has a faculty position. Not here, but somewhere. And just wants you to read things and sign off on them. And if you try to give them feedback, they’re just not willing to hear it. That is a real aggravating
situation [laughs]. Because it almost makes you adversarial and that’s the last thing you want. So that’s one example. Another example might be well, you know there are almost always people who think they know something that they don’t. And, they think they do, but when you look at it they haven’t thought through it.

A doctoral mentee who thinks that there is nothing to learn or thinks he or she already knows everything will not be ready for or receptive to a mentoring relationship. Faculty mentors said that taking the opportunity to see that others have perspectives that are valuable to the problem solving process and utilizing suggestions and advice from those who may provide an expert role or fresh eyes on the subject is an invaluable trait of a mentee.

**Personal Attributes.** The doctoral student’s personality is not only a component of a satisfactory mentoring relationship between the faculty mentor and doctoral mentee, but it also affects the relationship between the doctoral student and his or her cohort peers. The following subthemes emerged within this theme: interpersonal skills and compatible personalities; risk taking and self-confidence; and motivation.

*Interpersonal skills and compatible personalities.* Being part of a mentoring relationship and being part of a doctoral cohort requires interpersonal or social skills because working on research is a team effort. Desired or appropriate social skills allow doctoral students to be interactive, collaborative, and engaged with each other. Further, being part of a mentoring relationship means two personalities have to work together. This does not mean that they have to be the same, but the personalities should be compatible.

Faculty mentors conveyed that personality is an important part of making the mentoring relationship work. A biomedical sciences doctoral mentor explained, “You’ve
got to have, somewhere this ought to go, you’ve got to, your personalities have to match. And I don’t know where you want to put that one, but that’s really important.” The health professions doctoral mentor also pointed out that the personality is an important part of making the mentoring relationship work, and stated, “Intellectually, we train them, I mean training is the easy part. We question and I challenge them, but the personality, that makes a difference between a teacher and student relationship and a mentor/mentoree relationship.”

The mentee’s ability to interact and collaborate with the mentor and other students or researchers is crucial to the mentoring relationship. An education doctoral mentor explained that the doctoral mentee must be “willing to collaborate with faculty and other students and learning groups, that’s really important.” In order to assess if a student has the desired or appropriate interpersonal skills and can interact effectively with others, the health professions doctoral mentor brings his students together in a social situation:

I always check them when they interact with others. I immediately take them to lunch. I usually have like three or four gatherings of my team at the house. They come, we cook together. They think it’s just to be fun. And I’m just checking them out in how they interact with each other. You know, I do a lot of personality testing at home. They have some wine and they start cooking or those who do not cook and say, “No, I’ll help with the dishes.” I’m watching, I’m seeing what they’re doing. You know this student who stays in a corner and doesn’t talk much and doesn’t do anything and doesn’t engage. You know, it’s going be an issue because he’s not going to be a team player somehow, somewhere. You know so you pick up on that. I test them in a social environment a lot. Especially at the beginning.

Going beyond collaborating with the mentor and other graduate students, the mentee who has self-confidence and takes risks will be able to understand the research process.

*Risk taking and self-confidence.* The doctoral student who is willing to be vulnerable and accept failure and rejection would be considered a risk taker. Often at the
doctoral level in graduate school, the students in a cohort are the best of the best, many of whom have never received a failing grade or failed by any definition of the word. Because the academic standards are much higher in graduate school, especially at the doctoral level, it is likely that some of these students will fail. Faculty mentors in this research study communicated that a doctoral mentee must be driven and have self-confidence in order to have the fortitude to push forward through difficult times during the doctoral program and the mentoring relationship. A willingness to try new things is part of conducting research. One education doctoral mentor suggested that a doctoral mentee should be “willing to try new things, even if it’s not something they’ve done before.” A doctoral mentee must be able to allow for a certain amount of vulnerability and view failure as a learning opportunity. One engineering doctoral mentor wanted his students to try new things, but also wanted them to understand that there may not always be a positive outcome, and stated, “I think from the perspective of the student, you want them to be willing to try new things, be willing, I think that means be willing to fail. Not everything works. Be able to accept failure and rejection.” The other engineering doctoral mentor also suggested that failing is a part of research, so the doctoral student must have patience in order to continue. He explained:

Experimental work or simulation work can be very discouraging because one can go for a long period of time just failing over and over and over again, so patience is necessary. Personality that doesn’t allow one to get completely discouraged and give up when things aren’t going well.

The doctoral student who has never experienced failure may not be able to progress through the research process because he or she may have never developed the patience to cope with failure. Therefore, risk taking and self-confidence are key characteristics of a
doctoral mentee who is prepared to be mentored and to progress through the doctoral program.

**Motivation.** The doctoral mentee must be motivated in order to progress successfully through the mentoring process and program of study. Self-motivation or internal motivation may provide the impetus to persevere through failures and to envision a successful outcome. The faculty mentors in this study stated that part of being motivated is having interest in the chosen academic discipline. The mentee has to want to be a part of the mentoring relationship. The mentee must also be interested in his or her research. One biomedical doctoral mentor described the following, “They have to be motivated, they have to be motivated in some way. And you know sometimes I can motivate people, but sometimes you know they have to be internally motivated.” An engineering doctoral mentor echoed this statement and explained, “Graduate school is about finding an important problem and solving it yourself. Being the first one, and so you have to have that sort of passion and drive.”

Although motivation is important in a mentee, there are certain motivations that are undesirable. One of these motivations is trying to progress through the program as quickly as possible. The public health doctoral mentor explained, “They want the easiest route to the degree and they’re going to try every trick in the book to make that happen.” Another dysfunctional motivation is wanting the doctoral degree just for the sake of having one. One biomedical doctoral mentor stated that this type of student “might be doing it because they can’t think of anything else to do with their lives [or] is not committed to the Ph.D. program.” An arts and sciences doctoral mentor concurred and added, “They just want to do something, you know I just want to get a Ph.D. I’ve had that
before, I just want to get a Ph.D.” It is critical for a doctoral mentee to be motivated for the right reasons because passion, drive, and interest in the research assist in the development of the mentoring relationship, being a successful student, progressing through the doctoral program, and becoming an independent scholar. However, dysfunctional motivators such as just wanting a degree or wanting to get through quickly are easily recognized by the mentors and cause the mentee to be viewed negatively.

**Mentoring mindset of a doctoral student.** A reflection question was given to the faculty mentors at the conclusion of each interview and provided an additional data source for describing the mentoring mindset of a doctoral student. The prompt was “After reflecting on our interview, what is your perception of the mentoring mindset of a doctoral student who is prepared to be mentored?” This written format allowed the doctoral mentors time to think about this question before responding. Each doctoral mentor wrote a response and sent his or her answer to me later. I analyzed the answers to the reflection question, and found in this theme a concise collection of faculty mentors’ perceptions with regard to their respective doctoral students’ mentoring mindsets. The entire set of reflection statements is available in Appendix G. These data assisted in confirming the interview data, though more concisely, which helped to reveal the essence of the phenomenon. The subthemes that emerged were open to a learning relationship and capability to succeed.

*Open to a learning relationship.* Being open to a learning relationship is an important part of being mentored. If the mentee is not willing to learn or be open to the exchange of ideas and knowledge with the mentor, then there is no true purpose to the mentoring relationship. After reflecting on the term mentoring mindset, some of the
faculty mentors in this research study stated that the mentoring mindset of a doctoral student should include an openness or preparation to learn from the mentor, which included being able to accept constructive criticism. One biomedical doctoral mentor noted that a student who is prepared to be mentored is “willing to take advice to reach goals. They are generally more open-minded or open to taking advantage of or learning from every situation.” An arts and sciences doctoral mentor had a similar view stating that a mindset would include being “open to evaluating new ideas [and] enjoy open discussions.” The public health doctoral mentor echoed this statement and added, “I think the mindset is humble, inquisitive and open to new ideas.” The doctoral mentee with a mentoring mindset takes the opportunity to learn from all situations, is open to new ideas, is inquisitive, and knows when to ask for help.

*Capability to succeed.* Without the mentee’s desire to succeed and the enthusiasm to complete goals, it would be difficult for the mentoring relationship to progress. Therefore, part of the mentoring mindset includes the capability for the student to be successful in the relationship. One biomedical doctoral mentor explained that “A student that is prepared to be mentored is also internally motivated to succeed.” The other biomedical doctoral mentor stated that the student should be “excited about the research, dedicated and motivated.” Although motivation is an important factor in one’s capability to succeed, there are other attributes a student must have in order to be mentored at the doctoral level. An arts and sciences doctoral mentor stated that the doctoral mentee needs to have the following characteristics: “energetic enthusiasm toward the field of study; good work ethic; an understanding of the importance of knowledge in society; altruism; and does not quickly jump to conclusions or quickly form opinions.” Doctoral mentees
must be internally motivated, reflective, have a passion to learn, be enthusiastic and engaging, and autonomous.

**Summary themes.** Although I allowed the themes to emerge regarding the doctoral student’s mentoring mindset while analyzing the participant interviews, the reflection statements were coded separately because I asked the participants directly about the mentoring mindset. The subthemes that emerged from the reflection statements included the following: (a) open to a learning relationship, and (b) capability to succeed. In order to compare the characteristics that were coded to these categories to those from the participant interviews, I coded them to the themes that emerged from the interviews (see Tables 1 & 2). It is worth noting that the reflection statements only coded to two of the four headings: learning orientation of the mentee and personal attributes. This suggests that upon reflection, the doctoral mentee’s learning orientation and personal attributes, combined, are at the core of the mentoring relationship.

As I analyzed the faculty mentors’ descriptions of the mentoring mindset in doctoral students, derived from their interviews and written reflections, I employed a modification of the Stevick-Colaizzi-Keen method to analyze the data (Creswell, 2007; Moustakas, 1994). I composed a textural description of what the faculty mentors experienced and a structural description of how the phenomenon was experienced (Creswell, 2007). After the textural and structural descriptions were composed, the following essence of the faculty mentors’ experiences with the doctoral student’s mentoring mindset was revealed: The mentoring mindset of a doctoral mentee is a readiness for mentoring that can be described as a developmental continuum of experiences, aptitudes, and personal attributes. The more highly developed these mentee
characteristics that comprise the mentoring mindset, the more prepared the mentee is for the mentoring relationship and the more poised the doctoral mentee is to receiving the benefits the mentoring relationship has to offer.

Research Questions Answered

Question 1: How do faculty members describe the process of mentoring graduate students? The faculty mentors described the process of mentoring between a doctoral student and a faculty mentor as an informal process, which evolves to meet the needs of the student. King’s (2003) definition of the mentoring process included the importance of intellectual development for the graduate student mentee, “Rather than being concerned solely with the student’s completing the dissertation or developing technical competence, the mentor is concerned with promoting a broader range of psychosocial, intellectual, and professional development” (p. 15).

Most faculty mentors reported that the beginning of the relationship is more of a nurturing phase in which the mentee is more dependent on the mentor, so they take a more hands-on approach with the mentee. During this phase, the faculty mentor assesses the mentee’s abilities. In this study, the faculty mentors found that as a successful or optimal mentoring relationship progresses, the mentee transitions through phases of the relationship, becoming more collegial and scholarly. They were able to read, discuss, and provide feedback regarding research literature, improve their academic writing, and publish in scholarly journals. The faculty mentors encouraged doctoral students to become more independent and autonomous, which helped the mentee to strive for and exceed expectations, including career/professional goals. Kram (1983) stated that the
mentoring relationship proceeds through four phases: initiation (the beginning of the relationship), cultivation (career and psychosocial functions are developed and valued), separation (changes in the relationship), and redefinition (evolving or ending of the relationship). Roberts (2000) referred to this as the mentoring process, which included establishing rapport, direction setting, progress making, and moving on. Regarding academic settings, O’Neil’s model of student-faculty interaction includes: “a) making a critical decision and entering a relationship, b) building mutual trust, c) taking risks, d) teaching skills, e) learning professional standards, and f) dissolving or changing the relationship” (Lentz & Allen, 2010, p. 160). Even though the mentoring process takes time and is more fluid than the mentoring structure, there are certain phases that occur as the mentoring relationship between a faculty mentor and a doctoral mentee runs its course.

The faculty mentors stated that although there is no real conclusion to the mentoring relationship, the doctoral student graduates and moves on to a career, much like a child leaving a family. Even though the familial ties still exist, the family dynamics have changed. A biomedical doctoral mentor explained:

Well, I mean it’s not really a conclusion. I still hear from my old students all the time. So, I don’t know if I’m still mentoring them or not. But they do, well sometimes I do, sometimes they call me and they you know they want to know what to do about something or other. But I still hear from students that I had 10 years ago. They email me or call me to tell me what they’re doing or they got a new job.

The mentoring process is a fluid progression, which is dependent upon the doctoral student’s needs and competencies. Therefore, as the mentee progresses through the academic program, the mentoring relationship develops and changes.
Question 2: How does a faculty mentor describe the characteristics of a doctoral student who appears to be poised to benefit from a mentoring relationship?

Personal attributes such as interpersonal skills, compatible personalities, risk taking (allowing oneself to be vulnerable), self-confidence, and self motivation are inherent qualities that the faculty mentors stated would help the doctoral mentee to be open to the mentoring relationship. However, the mentee’s own motivation provides the main impetus to progress through the mentoring relationship.

An important part of the doctoral student and faculty member mentoring relationship is how personalities affect the relationship. With regards to relationships, Mullen (2012) suggested the mentee and mentor should “prepare well for their respective roles” (p. 121). Moreover, Johnson and Ridley (2004) stated that mentors and mentees must carefully consider if they are well matched in order for the mentoring relationship to thrive. The researchers described the following traits that both the mentor and mentee should consider when contemplating entering into a mentoring relationship:

Personality traits (e.g., sense of humor, warmth, humility, extraversion), social skills, communication style, writing ability, personal values (e.g., importance of family versus work, religious commitment), short- and long-term career goals, and desired career trajectory. (Johnson & Ridley, 2004, pp. 74-75)

Other important doctoral mentee characteristics that the faculty mentors mentioned included critical thinking abilities, being open to feedback from the mentor as well as being able to relate to others’ perspectives, and interest in the academic discipline.

Motivation is an important part of being an adult learner. Self-efficacy is defined as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given achievements” (Bandura, 1997, as cited in Wlodkowski, 2008, p. 187). Believing in one’s capabilities to achieve a goal or accomplish a task may influence an
adult learner’s motivation. Lentz and Allen (2010) stated that initiative, intelligence, emotional stability, career motivation and self-efficacy, and openness to experience are key mentee characteristics related to the mentee’s readiness to be mentored. The faculty mentors in this study described the doctoral mentees who are prepared to benefit from a mentoring relationship as already having basic knowledge and skills so that they know what they are getting into when it comes to pursuing a doctoral degree and entering into a mentoring relationship, which would include preparatory abilities, research experience, and communication skills. Edwards and Gordon (2006) determined that personality match and using effective communication strategies were desirable mentee characteristics.

**Question 3: How does a faculty mentor describe the characteristics of a mentee who does not seem to be poised to benefit from the mentoring relationship?** Some of the faculty mentors in this study described dysfunctional experiences with students who were what they termed “know-it-alls.” A doctoral mentee who thinks that there is nothing to learn or thinks he or she already knows everything will not be ready for or receptive to a mentoring relationship. Because the mentoring relationship is a reciprocal learning relationship, a doctoral mentee who is unwilling or unable to learn will not be able to take full advantage of the benefits the mentor or the mentoring relationship have to offer. The mentoring relationship between a doctoral mentee and a faculty mentor is an interactive learning relationship. One challenge that must be acknowledged is context of the mentoring relationship at the graduate level. A major difference between mentoring in a
business environment and mentoring in higher education is that the graduate-level mentor assesses and helps the academic progress of the mentee (Conway, 1998).

The faculty mentors stated that a doctoral mentee whose personality is not compatible with theirs or an individual who lacks social skills has a difficult time acclimatizing to the mentoring relationship. Further, research is a collaborative and interactive effort and if the mentee is unable to work with the mentor and others, then mentoring will be difficult. Johnson and Ridley (2004) stated that mentors and mentees must carefully consider if they are well matched in order for the mentoring relationship to thrive.

Faculty mentors identified undesirable motivations that would hinder the mentoring relationship, including trying to progress through the program as quickly as possible or is simply wanting a doctorate for the sake of having one. The faculty mentors also stated that those mentees who have never failed have a difficult time grasping the research process, which includes learning from failures. Long (1997) stated that time constraints and lack of understanding the mentoring process may cause dysfunction in the mentoring relationship.

To summarize Research Questions 2 and 3, I have created a table of doctoral mentee readiness indicators, which provides a comparison of the characteristics described in the interviews with the doctoral mentors (see Table 3).

Table 3

<table>
<thead>
<tr>
<th>Indicators of Doctoral Mentee Readiness</th>
<th>Indicators of the Absence of Mentee Readiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>Lack of interest</td>
</tr>
<tr>
<td>• Background knowledge</td>
<td>• Does not want to learn</td>
</tr>
</tbody>
</table>
- Academic skills
- Relevant experience
- Verbal and written skills
- Effectively conveys research

Aptitudes
- Demonstrates critical thinking
- Open to learning, new ideas, mentoring
- Open minded
- Synthesizes and applies what is learned
- Intellectual curious
- Imaginative
- Ability to be reflective
- High emotional intelligence
- Self-aware of strengths and weaknesses
- Contributes to academic discussions
- Sees multiple perspectives
- Able to accept constructive criticism
- Prepared to learn from the mentor
- Knows to request dedicated advising from mentors
- Enjoys open discussions

Personal Attributes
- Interactive
- Collaborative
- Respectful
- Humble
- Mature
- Vulnerable
- Learns from failure
- Willing to try new things
- Patient
- Confidence to ask for help
- Autonomous
- Interested in research
- Ethical
- Strong work ethic
- Internally motivated to succeed
- Desire to learn
- Responsible
- Altruistic

- Know-it-all
- Dysfunctional motivators
- Lazy
- Arrogant
- Sloppy
- Show off
- Jumps to conclusions
**Question 4: How does a faculty mentor describe the mentoring mindset of a doctoral student who is ready to be mentored?** A mentoring mindset goes beyond basic skills and understanding. The faculty mentors in this research study described the doctoral mentee’s mentoring mindset as having characteristics that were similar to Edwards and Gordon’s research. Edwards and Gordon (2006) described the following mentee characteristics as desirable in order to help enhance the mentoring relationship:

- Be open to accepting guidance from the mentor, and trust the mentoring relationship and the mentor; have a personal integrity in the relationship; make sure that the personalities of the mentor and mentee match, get to know the mentor on a personal basis, and establish a mutual understanding about the relationship at the outset; engage academically with the mentor, which includes participating fully in the program and engaging in intellectual dialogue; and be proactive in seeking out opportunities to communicate with the mentor, and use effective communication strategies. (p. 15)

By combining the descriptions of emergent experiences, aptitudes, and personal attributes of doctoral students from both the interview data and reflection statements, the detailed characteristics of what constitutes a mentoring mindset of a doctoral mentee are revealed (see Table 4).

**Table 4**

*Characteristics of a Doctoral Student’s Mentoring Mindset from the Mentor’s Perspective*

<table>
<thead>
<tr>
<th>Context of the Mentoring Relationship</th>
<th>Basic Knowledge and Skills of the Mentee</th>
<th>Learning Orientation of the Mentee</th>
<th>Personal Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td>Preparatory abilities and research experience</td>
<td>Demonstrates critical thinking</td>
<td>Interpersonal skills and compatible personalities</td>
</tr>
<tr>
<td>• varies by student</td>
<td>• background knowledge</td>
<td>• open to learning, new ideas, mentoring</td>
<td>• interactive</td>
</tr>
<tr>
<td>• contractual</td>
<td>• academic skills</td>
<td>• open minded</td>
<td>• collaborative</td>
</tr>
<tr>
<td>• responsive to student needs</td>
<td></td>
<td>• synthesizes and applies what is</td>
<td>• team player</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td></td>
<td></td>
<td>• not arrogant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• not a “show off”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• respectful</td>
</tr>
<tr>
<td>Informal</td>
<td>Relevant experience</td>
<td>Learned</td>
<td>Humble</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Evolving</td>
<td>Mentee can think critically</td>
<td>Intellectually curious</td>
<td>Mature</td>
</tr>
<tr>
<td>Transitions to Independence</td>
<td>Has good verbal and written skills</td>
<td>Imaginative</td>
<td>Vulnerable</td>
</tr>
<tr>
<td></td>
<td>Can effectively convey research</td>
<td>Not sloppy</td>
<td>Learn from failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to be reflective</td>
<td>Willing to try new things</td>
</tr>
<tr>
<td>Results</td>
<td></td>
<td>High emotional intelligence</td>
<td>Patient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-aware of strengths and weaknesses</td>
<td>Confident to ask for help</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inquisitive</td>
<td>Accepts difficult and even extracurricular assignments from faculty members</td>
</tr>
<tr>
<td></td>
<td>Is open to feedback and others’ perspectives</td>
<td></td>
<td>Autonomous</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Motivation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interested in research</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Driven</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ethical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Strong work ethic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Excited about the research</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dedicated &amp; motivated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not lazy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internally motivated to succeed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Has desire to learn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eager to become a full-fledged member of the research community</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Responsible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Altruistic</td>
</tr>
</tbody>
</table>

**Communication Skills**

- Has good verbal and written skills
- Can effectively convey research

**Risk Taking and Self-confidence**

- Vulnerable
- Learn from failure
- Willing to try new things
- Patient
- Confident to ask for help
- Accepts difficult and even extracurricular assignments from faculty members
- Autonomous

**Motivation**

- Interested in research
- Driven
- Ethical
- Strong work ethic
- Excited about the research
- Dedicated & motivated
- Not lazy
- Internally motivated to succeed
- Has desire to learn
- Eager to become a full-fledged member of the research community
- Responsible
- Altruistic
Implications

Mentoring plays an integral part in a graduate student’s academic experience; therefore, there are implications for graduate faculty members and higher education administrators. The essence of the faculty mentor’s experience with the doctoral student’s mentoring mindset was revealed as the following: The mentoring mindset of a doctoral mentee is a readiness for mentoring that can be described as a developmental continuum of experience, aptitudes, and personal attributes. The more highly developed these mentee characteristics that comprise the mentoring mindset, the more prepared the mentee is for the mentoring relationship and the more poised the doctoral mentee is to receiving the benefits the mentoring relationship has to offer.

Implications for mentors. A faculty mentor who is cognizant of the characteristics of the mentee’s mentoring mindset may be able to help the mentee identify his or her strengths and weaknesses. This, in turn, will help the mentee to grow along the continuum toward mentoring readiness and the development of a mentoring mindset. The mentors who participated in this research were asked to describe their experiences with mentoring on a one-on-one basis. Because each academic program provides different contextual influences to the mentoring relationship, it was evident that different mentoring models may be experienced by graduate students, as well. These different models include having multiple mentors, such as faculty members other than the student’s main mentor, and having peer mentors within cohorts or lab environments. There are different mentoring cultures in the various academic disciplines. Identifying the differences in the mentoring cultures and how they influence the mentee’s mindset will
help faculty mentors to better support and guide their mentees in the mentoring relationship.

Because the research led to the description of the essence of the mentoring mindset in that the doctoral student’s mentoring mindset develops on a continuum, it is critical to identify the role the mentor plays in the development of the mentee’s mindset. The relational aspect of mentoring suggests that both parties are responsible for the effectiveness of the relationship (Zachary, 2009). Therefore, the onus for development should not fall completely on the mentee. Rather, the mentor should develop competencies that contribute to fostering the mentee’s growth along the continuum. The research revealed that the mentoring process is situational and evolves to meet the needs of the individual student. Although the composite characteristics that comprise a mentee’s mentoring mindset have been identified, best practices and mentoring techniques will differ for each student, because not all students will be strong in all characteristics.

The last implication for mentors concerns the need for empathetic mentoring. Faculty members who mentor doctoral students are unique in that they can empathize with their mentees, having gone through a doctoral program themselves. By drawing on their own experiences as a mentee, the mentor can recall what their own doctoral mentor did in the mentoring relationship. The stress level of doctoral students can seem insurmountable on occasion, and the empathetic mentor should learn to recognize it. Being able to tap into motivation in order to power through the stress and complete the program is a characteristic that all doctoral students must possess. Empathic mentoring from the mentor may facilitate the mentee’s progression through the doctoral program.
Implications for higher education administrators. Different student cultural backgrounds may necessitate different mentoring approaches. Doctoral mentors mentioned that the mentor and mentee need to have compatible personalities, but individuals with different cultural/ethnic backgrounds may inherently have challenges with compatibility. Therefore, raising awareness of differences through cross-cultural training in formal mentoring programs would provide mentors and mentees with the tools to address their differences and grow in their cultural competency, in order for the mentoring relationship to thrive.

When analyzing the results, I recognized that structure is an important part of the mentoring process and that the academic discipline dictates much of the mentoring process (i.e., social sciences vs. biomedical laboratory sciences). A structured program with well-defined benchmarks that accommodates the fluid mentoring process should be implemented within each academic program, taking into consideration the unique characteristics within the academic discipline as well as the characteristics of a doctoral student’s mentoring mindset. This will better inform administrators, deans, faculty, and graduate students of expectations, as well as assist in the design of formal mentoring programs.

Overall Significance

This phenomenological research study provided insight into the faculty mentors’ lived experiences with the doctoral student’s mentoring mindset. Because there is little research on the mentees taking an active role in mentoring relationships (Zachary, 2009) or on the mentee’s preparedness for the doctoral student-faculty member mentoring
relationship in a higher education setting, this study provided me with insights into the characteristics that are needed for the doctoral student to be ready for a mentoring relationship.

Additionally, I was able to describe the following essence of a construct that I am choosing to call the mentoring mindset of a doctoral student: The essence of this research suggests that the mentoring mindset of a doctoral mentee from the mentor’s perspective is a readiness for mentoring that can be described as a developmental continuum of experiences, aptitudes, and personal attributes. The more highly developed these mentee characteristics that comprise the mentoring mindset, the more ready the mentee is for the mentoring relationship and the more poised the doctoral mentee is to receiving the benefits the mentoring relationship has to offer.

Because mentoring goes beyond basic faculty-student interaction, a significant insight gained from this study is the important role personality plays in the progression of the relationship. Personality provides a conduit for how individuals relate to one another. As indicated in the literature review, the theoretical framework for this study, relational mentoring, provides a concept of an interdependent mentoring process for both the mentor and mentee (Ragins & Kram, 2007) and “mutual growth, learning and development within the career context” (Ragins, 2005, p. 10, as cited in Fletcher & Ragins, 2007, p. 374). Therefore, if there are personality clashes between the mentor and mentee, then there will be no mutual growth or learning and the mentoring relationship will stall. Compatible personalities are critical for the mentoring relationship to progress and prosper. Moreover, the mentee’s motivation to learn and succeed as a doctoral
student is crucial. If a mentee does not want to learn from the mentor, then the relationship has no purpose.

The characteristics of a doctoral student’s mentoring mindset include experiences, aptitudes, and personal attributes, which comprise the basic skill set for the mentee to be prepared to benefit from the mentoring relationship. Being open to the mentoring relationship, having a learning orientation, and demonstrating an ability to succeed will help the effectiveness of the mentoring relationship. A doctoral mentee’s mentoring mindset can inform best practices for higher education when developing formal mentoring and mentee training programs.

**Recommendations for Future Research**

Although the context of this research study was the doctoral level of graduate school, it is important to note that mentoring is a multidimensional concept. This study focused on the faculty mentors’ experiences with doctoral students and their description of the doctoral student’s mentoring mindset. A future study that includes the doctoral students’ experiences would add depth to what was discovered from the faculty mentor’s experiences. Moreover, because this qualitative study cannot be generalized to the population, a quantitative component (mixed methods) would expand insights into the mentoring mindset, especially if the research is conducted at multiple sites.

As the mentors described their experiences with mentoring doctoral students, it became evident that the academic discipline influences the mentoring process. In other words, mentoring doctoral students in the biomedical or life sciences where the laboratory structure is set up so that all students being mentored by one faculty member
have daily contact, sometimes for long periods of time differs from mentoring those within the social sciences, which may be more of a one-on-one mentoring model that takes place in person, by telephone, email, or video conferencing. A study designed to explore if the doctoral mentee’s mentoring mindset differs based on discipline-specific influences might identify differences in desired mentee competencies among academic programs, which would help to inform administrators and faculty in each discipline regarding best mentoring practices.

Moreover, contextual influences vary among the different academic programs represented. For example, in some academic programs, the mentor is usually, but not always, the graduate student’s dissertation committee chair; while in others, the mentor is not allowed to be the student’s committee chair. Some programs may assign the mentor to the student, dependent upon the student’s research interests; while in others, the student chooses the mentor from the faculty members within the student’s department. Further, some programs may have had formal mentoring guidelines that must meet progressive benchmarks at the departmental level; while others may have allowed more freedom in reaching major goals in the student’s progression through the program. A study that explores these contextual influences would add to the knowledge gained regarding the doctoral mentee’s mentoring mindset.

During the interviews, several faculty mentors stated that they had never thought about or reflected on the mentoring relationship. This study brought certain revelations to these mentors as they answered the interview questions and reflection prompt. A research study designed to explore mentor awareness of mentoring processes as well as
characteristics of a faculty mentor’s mentoring mindset would be informative. The question could be posed: “Is there a mentoring mindset of the mentor?”

Cultural differences may affect the mentoring relationship, thereby influencing the mentoring mindset. Higher education administrators recognize the value of diversity among faculty, employees, and students. Because higher education institutions are becoming increasingly more diverse, exploring the influence that varying cultural backgrounds have on the mentoring relationship would help administrators and faculty to better address these differences.

Finally, two additional questions should be considered for further research. The role of personality compatibility of the mentor and mentee was brought forth from the participant interviews. Characteristics of the mentoring mindset included “personal attributes.” How many of these characteristics are functions of “personality” (thus, innate) that may be less malleable and less likely to develop on a continuum than other mindset characteristics? And one final question is the following: If we know the characteristics of a mentoring mindset, can an instrument be developed that would measure a mentee’s mindset for mentoring that would indicate the likelihood of the mentee’s capacity to benefit from mentoring? Alternatively, a self-assessment inventory for the mentee could be created, based on the mentoring mindset characteristics.

Limitations

One limitation was that the phenomenon was being viewed from the mentor’s perspective only and the faculty members who participated in this study may have only had good experiences, or predominately good experiences, with doctoral students, which
may have contributed to a slight lack of understanding of the students being truly prepared for the mentoring relationship. Another limitation is that the 10 faculty members were chosen from a variety of academic disciplines, but not all of the disciplines from the research site were represented, which would have offered a more complete set of data and thereby depth to the analysis. Additionally, because qualitative inquiry is emergent and open to interpretation, the research findings cannot be generalized to different populations of faculty mentors at other institutions.

Summary

Mentoring in graduate school, especially at the doctoral level, is an integral part of the level of success for the doctoral mentee. The essence of this research suggests that the mentoring mindset of a doctoral mentee from the mentor’s perspective is a readiness for mentoring that can be described as a developmental continuum of experiences, aptitudes, and personal attributes. The more highly developed these mentee characteristics that comprise the mentoring mindset, the more ready the mentee is for the mentoring relationship and the more poised the doctoral mentee is to receiving the benefits the mentoring relationship has to offer. A one-size-fits-all approach to mentoring a doctoral student is difficult because each student brings a different set of competencies to the relationship. As Mullen (2006) stated, “No one mentoring strategy is a panacea for student engagement, quality of work, and program success, but each is nonetheless a critical piece of the puzzle” (p. 58). However, a doctoral mentee who has preparatory abilities and research experience, effective communication skills, demonstrates critical thinking, is open to feedback and others’ perspectives, has effective interpersonal skills, a
compatible personality with the mentor’s personality, is a risk taker and self confident, and is self motivated, may be ready to reap the full benefits from the mentoring relationship.
LIST OF REFERENCES


developmental relationships. (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses. (3232884)


perceived importance of mentoring functions. *Career Development International, 10*(6/7), 429-443.


Spitzmüller, C., Neumann, E., Spitzmüller, M., Rubino, C., Keeton, K. E., Sutton, M. T.,


APPENDIX A

GRADUATE DEAN’S AWARD FOR EXCELLENCE IN MENTORSHIP
2012 Graduate Dean’s Award for Excellence in Mentorship

**Purpose:** The Graduate Dean’s Excellence in Mentorship Award recognizes full-time regular UAB faculty members who have demonstrated exceptional commitment as mentors of graduate students and / or postdoctoral fellows.

**Award:** Each award recipient will be presented with a plaque that recognizes his / her receipt of the award. In addition, each honoree will receive a bound compilation of support letters that will serve as a documentation of his / her mentoring accomplishments. The bound volume may also contain photographs submitted by nominators. Information about the award recipients will be publicized in the UAB Reporter, on the Graduate School web site and through other appropriate media.

**Eligibility:** Eligibility is limited to full-time UAB graduate faculty members who hold a primary appointment in one of the ten schools other than the Graduate School, or in a Joint Health Sciences department. The individual must have held faculty status at UAB for a minimum of three years and may receive the award only once in any five-year period.

**Criteria for Selection:** The awards shall be based solely on outstanding accomplishments in mentoring as demonstrated by any or all of the following:

- Ability to inspire and motivate students and / or postdoctoral fellows as they engage in research activities, seek grant support, and publish their work
- Promotion of ethical behavior and professional values among students and / or fellows
- Creation of a collaborative and constructive atmosphere for the training of students and / or fellows
- Imbue students and / or fellows with a commitment to life-long learning and professional development
- Demonstrate a supportive and open-minded attitude regarding the career development of students and / or fellows
- Serve as an outstanding role model for students and / or fellows in their performance of scholarly activities and service

**Procedure for Nomination:** Any member of the graduate student body, postdoctoral community, faculty, or alumni may initiate a nomination by completing and submitting, by the announced deadline, a nomination package consisting of: 1) a nomination form; 2) an abbreviated biographical sketch of the nominee limited to three pages (please do not include a complete CV); 3) a list of current and former UAB graduate students and postdoctoral fellows, their current status, and other achievements (if applicable); and 4) Five letters of support from current and former trainees including email addresses; a minimum of 5 letters is required for the nominee to be eligible for the award.

The documentation submitted must clearly demonstrate that the nominee meets the selection criteria and eligibility requirements.
Neither the 2008, 2009, 2010, or 2011 recipients of the Mentorship Award (see next page) are eligible to be nominated for the 2012 award. For a complete list of former recipients, visit the Mentorship Awards Website at http://main.uab.edu/Sites/gradschool/faculty/41110/
APPENDIX B

LITERATURE MAP
Faculty Mentoring Graduate Students

History of Mentoring

Mentoring Processes

Mentoring Graduate Students

Benefits of the Mentoring Relationship

Challenges of the Mentoring Relationship

Effective Mentee Characteristics

Concept of Mindset

Theoretical Framework

Research Study

**Title:** What Constitutes a Mentoring Mindset in Doctoral Students? A Phenomenological Study of Graduate Faculty Experiences at a Research I University in the Southern United States

**Question:** What constitutes a mentoring mindset in a doctoral student who is being mentored by a graduate faculty mentor?
Invitation Email

July 2, 2012

Dear Graduate Faculty Member,

This is an invitation asking you to participate in an important study on mentoring doctoral students: *What constitutes a mentoring mindset in doctoral students? A phenomenological study of graduate faculty experiences at a Research I University in the Southern United States (Protocol Number: X120409010)*. This research is being conducted as part of the requirements of my doctoral program at the University of Alabama at Birmingham, School of Education.

You are receiving this invitation because you are a faculty member with graduate faculty status who has received the *Graduate Dean’s Award for Excellence in Mentorship*.

I will be conducting face-to-face interviews at your discretion. The time, place, and date will be at your convenience. The interview will take between 30 minutes to one hour. You may be asked for a follow-up interview if I need to clarify any of your answers provided in the initial interview. You will be asked to reflect on one question after the interview and provide the answer on a sheet and mailed using a self-addressed stamped envelope that I will provide. This may take you 10 – 30 minutes.

Any information obtained in connection with this study will remain confidential and your identity will not be given out. Demographics will only be reported in aggregate form in the final report.

If you are willing to participate in this important research, please contact me at kcarter@uab.edu or 975-8724 as soon as possible.

Sincerely,

Kellie R. Carter
UAB Graduate School
511 Hill University Center
1400 University Boulevard
Birmingham, AL 35294-1150
Phone: 205-975-8724
Email: kcarter@uab.edu

Dissertation Research Study
APPENDIX D

PARTICIPANT INFORMATION SHEET
Information Sheet

TITLE OF RESEARCH: What constitutes a mentoring mindset in doctoral students? A phenomenological study of graduate faculty experiences at a Research I University in the Southern United States

Protocol Number: X120409010
IRB Approval Date: April 24, 2012
Expiration Date: April 24, 2013

INVESTIGATOR: Kellie R. Carter (UAB)

SPONSOR: UAB School of Education, Department of Human Studies

You are being invited to participate in a research study exploring the mentor’s perspective of what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor. The research study is being conducted by Kellie R. Carter, a doctoral candidate at The University of Alabama at Birmingham School of Education. By exploring the doctoral mentee’s mentoring mindset from the perspective of the faculty mentor, we hope to better understand how to prepare doctoral students for the experience and develop mentoring models to better inform faculty, students, and higher education administration. This, in turn, will provide guidance for possible structured mentoring programs to be created and implemented.

You have been selected as a possible participant because you are a faculty member with graduate faculty status in a doctorate granting program who has also received the UAB Dean’s Award for Excellence in Mentorship. If you decide to participate, you will be asked to complete a face-to-face interview regarding your perceptions of doctoral students who are prepared to be mentored. The interview will take approximately 30 minutes to one hour to complete and will take place in a location and at a time of your convenience. The questions asked during the interview will be predetermined and open-ended. Demographic questions will also be asked during the interview, but will only be reported in aggregate form in the final report. You may be asked to do a follow-up interview if I need clarification for your answers from the initial interview. The interview will be audio recorded and transcribed verbatim by me. You will also be asked to reflect on one question after the interview’s conclusion, write your thoughts about the question, return the question to me using the addressed stamped envelope I will provide. The reflective question will take 10 – 30 minutes to complete.

All information collected will be kept confidential. Instead of using your name, a number will be assigned to you. To protect your anonymity, this number will be the only way in which you will be referenced throughout the research study. Data collected, including audio recordings and transcripts, will be kept on file by me and on my computer that remains locked with a password. Printed copies and media storage will be kept in a fireproof lockbox in my office. There are no known risks or discomforts to any participant associated with this research study. The number of participants in this study
will range from 8 – 12. Any information obtained in connection with this study will remain confidential. Information collected through your participation may be used to publish in a professional journal, and/or presented at a professional meeting; however, your identity will not be given out. You may withdraw from participation at any time without penalty.

You may request a copy of the interview questions for future reference. Your participation is voluntary and your decision whether or not to participate will not jeopardize your relationship with UAB or the School of Education. If you have any questions about the research, I invite you to ask them now. If you have questions later, please feel free to contact me at kcarter@uab.edu or at 205-975-8724.

If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the Institutional Review Board for Human Use (OIRB) at the University of Alabama at Birmingham (UAB) at (205) 934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for “all other calls” or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 a.m. to 5:00 p.m. CT, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.
APPENDIX E

INTERVIEW PROTOCOLS
Protocol: What Constitutes a Mentoring Mindset in Doctoral Students? A Phenomenological Study of Graduate Faculty Experiences at a Research I University in the Southern United States

Time of interview: __________________________________________

Date: ______________________________________________________

Place: _____________________________________________________

Researcher: ________________________________________________

Participant: ________________________________________________

Position of participant: ______________________________________

Introduction:
(Participant name), I want to thank you for taking time to talk with me today. As stated in the recruitment letter, I am conducting a phenomenology research study here at UAB. The purpose of my research study is to describe and explore from the mentor’s perspective what constitutes a mentoring mindset in doctoral students who work with a graduate faculty mentor at a Research I University in the Southern United States. As a reminder, I am audio recording as well as taking notes during our discussion. Audio recordings will be transcribed verbatim by me. At the conclusion of this interview, I will assign you a number. To protect your anonymity, this number will be the only way in which you will be referenced throughout the research study. Are you ready to begin?

Demographics (This will only be reported in aggregate form in the final report)

Gender: ________________________________________________

Race: ________________________________________________

Native English Speaker? (Y/N):

Years teaching in higher education: ____________
**Questions:**

Icebreaker #1: Please tell me about your educational and professional background.

Icebreaker #2: What lead you to a career in academia?

Icebreaker #3: How many students do you mentor (on average) at one time? (Probe: When did you start mentoring students? What students do you mentor?)

Icebreaker #4: Describe the kind of mentoring you do (dissertation, lab, both? Assigned or chosen by student?)

**Primary Questions**

1. What is the purpose of the mentoring relationship?

2. What are the characteristics of an effective/successful mentoring relationship?

3. What are the characteristics of a doctoral student who appears to be prepared or open to benefit from the mentoring relationship? (Probe: What does the student do that shows you he/she has a mentoring mindset? Knowledge, skills, dispositions, habits of mind?)

4. What are the characteristics of a doctoral student who does not seem to be prepared to be mentored? (Probe: What does the student do that shows you he/she DOES NOT have a mentoring mindset? How do students overcome these challenges in order to be mentored effectively?)

5. What are your perceptions of how the student benefits from the mentoring relationship? (Probe: What is the outcome of the mentoring process for the student? Are there any benefits to you, the mentor?)

6. How would you describe the structure of a mentoring relationship between a graduate faculty member and a doctoral student?

7. How would you describe the process of mentoring graduate students? (Probe: How is a mentoring relationship initiated, cultivated, transitioned, and concluded?)

8. Is there anything else you would like to add regarding your experiences mentoring doctoral students?
Thank you for your time. Please be assured that your confidentiality will be maintained throughout the research study and the reporting process. May I meet with you in the next couple of weeks if I need to clarify anything? The following number will be assigned to you for this research study:______________________________.

Also, I am giving you a sheet of paper with one question. Please reflect on the question over the next week, provide an answer, and use the stamped envelope to return it to me. Again, thank you for your time.
**Reflection Question**

**Protocol:** What Constitutes a Mentoring Mindset in Doctoral Students? A Phenomenological Study of Graduate Faculty Experiences at a Research I University in the Southern United States

Participant #: __________________________

After reflecting on our interview, what is your perception of the mentoring mindset of a doctoral student who is prepared to be mentored?
APPENDIX F

SIGNIFICANT STATEMENTS
They should be prepared to learn. Well, they have to have social skills. They can’t be a complete you know …I don’t know [laughs]. They need to be able to take criticism. Take the opportunity to learn from anybody in the lab who has something of knowledge that they don’t.

Okay, if you’re going to benefit, you have to listen, appreciate the experience the mentor has. And that they can…let them advise and help you. Don’t be stubborn don’t be uh paranoid. You know a person who doesn’t think they have anything to learn, then that’s a big problem. or if, if a yeah.

You’ve got to have, somewhere this ought to go, you’ve got to …your personalities have to match. And I don’t know where you want to put that one, but that’s really important.

When you interview them, they do not use “I”. They say things like me and my friends or me and my parents or me and we, us. Very little “I” did this and “I” did this and “I” did this.

This is so um so subjective, but I always ask this question. Tell me about you and I wait to see what they’re going to say. Warm people say what do you want to know about me? And I say open question, what do you want to tell me? Warm people start talking about the way they grew up. The things that they like. Um they open up very quickly.

You want a person who can allow himself or herself to be human and vulnerable. Otherwise, there’s no way you’re going to be able to correct. You’re not going to be able to fix. I mean these relationships are about check this fix that, or I don’t think you are doing this right. You’ve got to, you know, you’ve got to be able to have a recipient and on the other hand, we also need to be vulnerable. And I think that a lot of mentors, we forget about that. They have to see us as humans and, you know as colleagues. You know there’s a level of equality. You know whether there is an established colleague, everybody’s a colleague in training. But we’re colleagues, nonetheless.

Very open ended question, tell me about you… Um you know the response to those hints that I drop are very they become very engaging, they’re very engaging people, you see.

I always check them when they interact with others. I immediately take them to lunch. I usually have like three or four gatherings of my team at the house. They come, we cook together. You know. They think it’s just to be fun. And I’m just checking them out in how they interact with each other. You know I do a lot of personality testing at home. Um ,you know they have some wine and they start cooking or you know those who do not cook and say, “No, I’ll help with the dishes”, I’m watching I’m seeing what they’re doing.

There’s got to be a trust issue, you know.

Well, that’s again a hard question because students are different. Every student is different. You know, they have different personalities. And so you could have different
students that are prepared to be mentored, but they’re prepared to be mentored in a different way.

Yeah, so each student has a different set of skills. Um they have a certain basic knowledge, but then each of them have expertise in a different area. Based on what their project is. Um so, we try to work their project. You know, things are going wrong and you realize they have skills in a certain area and you kind of try to push their project in that direction. Um and then also, the other neat thing about, at least my lab and I think other labs are like this, is it is true that each student does have a little bit different expertise, so they actually interact with each other, so they kind of mentor each other in a way, or help each other out.

You know, they’re all interactive. I don’t think I’ve had anybody that’s been you know kind of not wanting to play nice.

I think it’s somebody who’s open and prepared and has the skills to accomplish their goals, which typically is completing a masters or PhD thesis.

So I think part of a good relationship or a good mentoring relationship, is having people who want to do it.

So I think you have to you know it comes back to sort of understanding what they want.

So I think that’s part of what the student needs to bring to the table is some level of interest and ability. And it works better when they’re pretty interested.

I think you know as I said before, I think from the perspective of the student, you want them to be willing to try new things, be willing I think that means be willing to fail. Not everything works. Being able to accept failure and rejection.

I think the other part of that is they’re going to have to have some relevant experience.

And now we’re seeing a lot of kids who are doing undergrad research, research experience for undergrads during the summer, those sorts of things, so I think they come with some of those experiences, they know what they’re getting into and they’re more open to the mentoring relationship.

Graduate school is about finding an important problem and solving it yourself. Being the first one, and so you have to have that sort of passion and drive.

I like it when the student listens well and takes notes, if that’s necessary. Actually, seriously considers the suggestions that one makes. Doesn’t necessarily follow them blindly. At least remembers what you said and reacts to it and comes back with some comment or evaluation of what one is suggesting. It works both ways. I like to view it as a collaboration. And some of our students are in their thirties and have wide experience with life and even with research, so are equals with every respect, not just different in
age. Not even much different in age… or experience. I guess I can’t say that almost every student that comes through our door isn’t very different from me in age. [laughs].

It does take a good bit of discipline. The student needs to take the time and make the effort to master the work that’s already been done in the field, which is a daunting task these days because there’s such a huge amount of information out there.

So, that would be the foundation would be to educating oneself with what’s already been done. And then experimental work or simulation work can be very discouraging because one can go for a long period of time just failing over and over and over again, so patience is necessary. Um personality that doesn’t allow one to get completely discouraged and give up when things aren’t going well. Then one does some imagination to see one’s way around problems to see what’s of interest and what’s new and what’s in the data one has before one.

I guess willing to try new things, even if it’s not something they’ve done before. Willing to collaborate with faculty and other students and learning groups, that’s really important. Being flexible, so that they don’t say well there’s one and only one way to do this because I’ve always don’t it that way. I think letting your guard down a little bit. It’s okay for them to show they don’t know everything about everything and it’s okay for us to show the same thing. So there has to be…agreeing to disagree, but also be willing to trust. That’s a lesson that some students have not learned because they haven’t had that experience.

And at the doctoral level particularly, somewhat at the masters level, but at the doctoral level particularly, it’s really not about courses anymore. It’s really about where are your deficits, where are your strengths. How do we maintain, grow your strengths and really address your deficits.

But this is all about learning-thinking, you know? So, there’s a need to be able to accept new ideas and some are not quite there yet.

Like in our field, its really big that they take a they are open to multiple perspectives: the community resident or patient’s perspective, the service provider’s perspective, the insurer’s perspective, the work site administrator’s perspective. They have to understand all of those if they’re planning health promotion. You can’t just plan it from an advocacy patient standpoint, you can’t just plan it from a service availability or restriction standpoint from cost containment. You’ve really got to understand multiple perspectives so that you can come to some consensus.

Somebody who is um organized, who does the reading, does the work, applies themselves, shows up to class, completes all assignments, is able to relate other texts to texts, many texts to texts, films to texts, um experiences to texts. Is able to trace theories from seminal works into neotherorists. Articulates insights, asks good questions, makes connections between theory and practice, sees uh interdisciplinary connections…can look at umm obstacles and um limitations in studies as well as positives and I don’t know what
to call them but I guess um good points or possibilities. Um one last thing, I would hope that my students are people of justice and equity.

Well, the first one is excited about their topic, I mean that’s got to be there. They have to be non-defensive. You know a thing I end up writing about students in letters of recommendation that when I really think they’re great is that they have a lot of intellectual curiosity. So, if I sense that, then I think you know we’re going to get along good. umm. You don’t have to be the most brilliant student, but boy it’s much nicer if they have good written communication skills. It just…things go so much faster and smoother if the student knows or at least knows mostly how to write, not totally. I’m thinking back to my past students. They have to have um they have to be committed. You know, make the commitment to work with me. they have to be assertive and hardworking.

First, characteristic – they have to be interested in what they’re doing. They have to be interested. They have to have a work ethic. Lazy people will not succeed. They have to have common sense. And I’ll take common sense over book smart any day of the week. And they have to have to be ethical, I don’t know how you would say. They have to have ethical traits and such. We can’t have people who are willing to cut corners and cheat to get to their answer. So, those are four pillars that I have that I think makes for very, very successful students. And if the student is missing any one of those, they won’t be successful.

I like personally one that is more interested in the science and making significant advancements in the science rather than simply I want to get a PhD and get a job. It’s very typical. I see that…I have some people in the past who just want to be lab rats they’ll be in there all the time just doing stuff. They’ll do the assay six different ways to try to get it to work well. And I have other people saying hay let’s buy a kit, I want to get this over with cecause I want to get my degree and get out of here. And it’s important that they can do that because there’s a practicality aspect of it. But at the same time, the person that I think we want out there in society is the one that they can do both. Where they can make the deadlines, they can, but their purpose is for more the science than simply the advancement or simply the PhD behind their name. Yeah, that’s what I really see. The other thing is it gets back to the ability to interact with others. You have some students that just hate teaching and I understand. Because believe me I was a hundred times more nervous talking to people than any of them were. It’s just gradually you get used to it. And that could be one reason why you hate teaching, but once you get over that I think you get a good, positive feedback from the fact that you’re conveying that information, but it gets to the point where the reason why scientists had problems in the past is because the scientists can’t communicate with normal society. And so I think it’s really important to get the students into the classroom so they know how to expound on the significant aspects that people and i.e. society will pick up on and say hey that is pretty important. So, depending on who you’re talking to, everybody has their own opinions. You know a student who likes to interact, you know I’ll have students who I can tell like mentoring the other students. And it’s like and others it’s like Oh, God, and there are some bad students you don’t want to mentor, okay. I’ll say I’ll take care of
them, it’s no problem. but I think that’s a very important aspect where it’s not only doing science and making progress in science, but it’s conveying the significance and the importance of that science to society.

Everybody’s like that to a certain extent and it’s a gradual process where you’re to a point where you start generating…and I see that. That’s what actually makes a really good student. Where they start out kind of apprehensive, but still have good logic, good skills. Whether it be math or ability for experimental design. And then they all of a sudden start applying it so by the time they leave here, they’re already thinking stuff like you know we ought to do this. Hey you’re right, that’s a great idea. You know? And so and that is a very gradual process. And the other part of that is writing. One of the things we’ve all forgotten. And that takes a lot of experience. That took me a long time to work.

Oh gosh. Won’t listen. Doesn’t learn. Umm might be doing it because they can’t think of anything else to do with their lives. Is not committed to the PhD program.

So I guess if the personality of the student does not match mine at all, then that’s not going to work. They cannot know it all.

Because the moment they go into this I,I,I, I see a yellow flag right there. Chances are this person is not a team player.

The one I don’t want to be my student. He couldn’t, he was so nervous. He couldn’t talk, I mean to a point. And I asked him about science, he blah, blah, blah, he couldn’t hit, everything was going wrong.

Um you know this student who stays in a corner and doesn’t talk much and doesn’t do anything and doesn’t engage. You know, it’s gonna be an issue because he’s not going to be a team player somehow somewhere.

Well, you know I have had students that have not made it through. It wasn’t that they were anti social or anything, but I mean some, I’ve had students who have not made it through to the PhD. And I think in the end it’s because it’s really not what they want to do.

Well, I think if they don’t want to be a scientist, there’s not really anything you can do except they have to come to that conclusion and go do something else. I don’t think there’s any way you can mentor them if that’s not what they want to do. And then, if I see that, I see it as my job to to help them kind of see that and come up with a plan of what they want to do next…what they really want to do. If they don’t want to be a scientist, there’s nothing I can do to make them.

You know it’s hard to mentor a kid who goes to grad school because somebody said, “You’re smart. You’re smart or you’re good at math or whatever, so you should go to engineering graduate school.” And they’re like “I don’t know what to do, oh they’ll pay
me. I can have a placeholder for four”, I mean this is what it’s like in engineering, “I can have a placeholder for four years because they’ll pay me.”

You know one that I’ll put out there is they’ve never failed before. Yeah, so if they’re not ready to fail, they’re not prepared.

I think more practically, you know another group of students that don’t seem to succeed are those that you know undergraduate education in science and engineering especially, is in some sense about mastering some basic skills. You know and I would argue that’s a conversation for a separate day that the lecture format of teaching and giving tests is the right way to deliver that material. Give the student practice and then see if they’ve got it, right? That’s not what graduate school is about.

And I said you know I get a lot of students who get pushed by their undergraduate advisors “hey you’re really smart, you should go to grad school”, which is true. They have the raw capabilities to do well in grad school. But they come and they’re not that committed, it’s not that interesting or exciting to them. And then they kind of fall back into undergraduate mode. You know, tell me what to do, tell me where the bar is so I can get over the bar. And then they’re not going to be successful and then it’s hard to mentor them. because I guess their expectations are different.

I suppose if a student is just in a PhD program because he or she has nothing else better to do, but that can happen just because the job market is not good. If the student won’t participate in a collegial relationship…umm and make progress and come back with ideas and react to one’s suggestions. If it doesn’t, if the relationship doesn’t work in two ways, I think that’s the main thing that could cause it to break down.

Definitely the bean counter. Definitely the one who’s very worried about did I make an A in everything. I think ones who are really caught up in the competition within their peer group, within their cohort. And you have to help them understand that is really not what it’s about. But we really have some that…admittedly few which is good, who would even work contrary to someone else if it made them do better or look better. That’s definitely not somebody that’s open to mentoring.

Occasionally certainly in fieldwork or in practicum, you often, not often but sometimes have to have a ‘come to Jesus’ meeting between them and the facilitator because they want to tell the agency to change everything that it does. That’s not somebody who’s really open to mentoring. Because they’re not there to learn, they’re there to impress or to tell somebody how to do things.

People who are very worried about getting through a program as quickly as possible, but not necessarily gaining a lot of knowledge. Just gaining a credential, maybe to maintain their current employment, or to get the better position and we try to weed those out during the admissions process…really not the best students. We don’t want people to think of it as…our job is not to turn out a professional certificate, that’s not what we’re doing. It’s not, you know, an 18 month professional certificate, you certify that you’ve
taken this level of Excel or accounting experience, but there are some that come in with that expectation.

The right opposite. [laughs]. Somebody who does not complete assignments, who does not show up for class, who is not able to make any kind of connection between theory and practice or text and texts, and text and film, and um holds a lot of prejudice and unjust kinds of ideas and notions, which interfere with the way in which they see the world and others see the world. Umm has a very rigid form of what education is and is not open to innovation or openness to thinking about entertaining other thoughts or other’s thoughts. Cannot trace a historical movement or theory over hundreds of years. Is unable to assimilate what they read and apply it. Sees only products and not process. Talks about particular areas of the doctoral program as hoop jumping.

If you’re not happy about learning something that you’re learning, then why are you doing this? I would hope it’s not for a paycheck.

They don’t know what they want to do is number one. I don’t mind if they, in fact I kind of like if they know what they want to do, but they haven’t quite molded it, you know pinned it down. Cause that can be a fun process to go through. They don’t think they know everything already. They’re not open about expectations, they sort of approach it like you work for them and … that’s really probably it.

Because if they’re not interested, they’re not going to do well, they’re not going to like it. If they don’t have a work ethic, they’re not going to do well because you know they’re lazy. Even if they’re smart, if they don’t have common sense, I laugh at people all the time, I’ve seen students that are 4.0 students, but they can’t tie their shoe without instructions. They won’t be successful. And then the ethical part, which I’ve added over the last couple of years, I find equally important. We can’t have…students have to understand that we are seeking the truth. It’s not whether or not they’re right or wrong in their hypothesis, it’s just whatever, what does the data tell us.

Those students who are going to graduate school because they don’t know of other options. That’s probably your biggest problem. Or those who fail to get into a professional school and then look at graduate education as their second option. Those are less likely to be good students. And to not either not finish or if they finish get out of the discipline.

A doctoral student is one that normally I will get some students that don’t necessarily have the good scientific logic yet. They don’t necessarily have a general direction in their science. They just want to do something, you know I just want to get a PhD. I’ve had that before, I just want to get a PhD. Or more important, I’ve had students, I just want to go down to Ranch and Juevo in Mexico and we’ll do the sea turtle work there. And it’s like well, what are you going to do, you’ve got to be doing some science. They’ve been doing it for 20 years down there and you’re not going to be doing anything new. So I want someone who’s thinking. The unprepared student is one who doesn’t have good
scientific methodology, background to a certain extent is important, but as long as you have good scientific method and logical thinking, you can apply that to any area.

They should be prepared to learn from mentor, excited about the research, able to accept constructive criticism, dedicated and motivated. They should not be lazy, arrogant or sloppy.

I think the key part of the question is “who is prepared to be mentored”. I think most doctoral students walk into programs thinking that they need to demonstrate to mentors how intelligent, or independent, or hard worker they are or can be. By walking in with such mind frame, they are not prepared to be mentored; their focus is to “show off” rather than to “receive mentorship”. Mentors need to learn to recognize that and help students to develop a mindset of being “mentored”. This requires conversations, time investment and trust.

A student that is prepared to be mentored is also internally motivated to succeed and willing to take advice to reach goals. They are generally more open-minded or open to taking advantage of or learning from every situation.

Key characteristics for a student ready to be mentored include openness (willingness to accept all feedback), desire to learn – real passion, ability to be reflective, high emotional intelligence. The student must have good self awareness. What he/she can do well and the ability to recognize the signs when things are not going well. At this point the student must have the confidence to ask for help.

The student need only be eager to become a full-fledged member of the research community in his or her chosen field.

My experience indicates that doctoral students who are genuinely interested in mentoring approach faculty after speaking with their peers, who share positive and negative experiences. These students are respectful, yet know to request dedicated advising to develop original ideas for scholarship, explore methodologies, learn effective protocol, build needed contacts and engage with study participants. Successful mentees accept difficult (and even extracurricular) assignments from faculty members, recognizing that wisdom and capacity emerge through teaching, service and scholarship challenges. I discourage doctoral students form social comparison, since each progresses at a different pace, yet I have observed peers who exhort others to request mentoring from seasoned faculty. In a nutshell, the mentoring mindset is a desirable attribute for successful doctoral study that may be fostered by dedicated and responsive faculty.

Doctoral students who are open to mentoring and reciprocal relationship to learn together is what it takes! Neither the mentor of the mentee can have the mindset that they know it all. A doctoral mentee has to be autonomous. That is to say, as a mentor we cannot be expected to let students know due dates, formatting expectations, or be in our offices when students want us to be here. They have to make appts., respect our time, and see the program as a process rather than a bunch of hoops to be passed through. Over my 16
years here, beginning 17, I have mentored over 25+ doctoral students mostly in the methodology. For the most part, most are mature and responsible students. This is part of my position that I so enjoy!!!

I think the mindset is humble, inquisitive and open to new ideas.

If the student is prepared to be mentored, then they should enter with an open mind. Preconceptions can often lead to problems. My perception is that many of them are very confused as to what to expect.

Energetic enthusiasm toward the field of study; good work ethic; an understanding of the importance of knowledge in society; altruism; open to evaluating new ideas; enjoys open discussions and does not quickly jump to conclusions or quickly form opinions.

We question and I challenge them, but the personality, that makes a difference between a teacher and student relationship and a mentor/mentee relationship.

Well, initiation means that we do several things to try to expose our labs to available graduate students if we have the money so to make them aware of us and our research…websites, poster sessions, meet and greet things. Um then we meet with potential students and for me it’s like okay this is what I do, what part of it interests you? You don’t want someone there just because none of the other labs are open or you’re getting kicked out of a lab and need a home and don’t know what to do. You know I’ve had that situation where a couple of people have approached me that have been booted out of their labs. And it’s like, okay that’s not good, I don’t need trouble. So you know I’ve had 2 students and initially they do a rotation with you and you kind of check each other out. Did they like the lab, do they have good skills, are they trainable, can they think critically? Um do you think they are going to be successful? So it’s this kind of I’m sure they are probably thinking during those rotations they ask what do I want to learn? They will decide if you are a match. Then they join a lab.

They start on the right track, they take classes, they choose a project, something they can do in that so they will be about the lab. Then they read literature and I introduce them to people. Then they get to a point where they can write in a style that can be published without you editing it. They’ll never be at the same level because you will always have more experience though they can be scholarly. There is never real closure because you’re always keeping in touch (you are still in their orbit). They need recommendation letters, etc.

I think that we immediately start with their most general idea. Um, I value their individuality and I said “you know if I have this data, what do you think this data will be good for?” And usually they tell me something that there are 100 publications out there on the same topic. Say “cool, Run it. Oh great. Look at your result. Go and search for the literature.” Oh, somebody published that. I knew it. “Now, let’s twist it. What do you learn, go and read, go on.” So I develop that. Very important to me to be able to do that. Then it goes from there. You know it keeps growing. Something else I like is, they need
to interact with each other because if you have the idea about the sky is green. And I have
the idea that the house is red. I cultivate your idea and I cultivate the other person’s idea.
Then I bring the two of you together. And then that’s when they end up publishing seven
to 14 papers. They publish like that and then all of them publish together because they
interact with their ideas.

I don’t think there is a formal structure. Um. So, usually when they start out, of course
they’re a little more dependent on you, the mentor, to you know actually tell them what
they are going to do, outline things for them, tell them how things are going to be. But
then as they become more familiar, you know tell them what to read and get started, but
as they start reading get more familiar with the techniques and start working on the
experiments. And then at first you interpret the data with them and then once they get
practiced on that, then they will find papers on their own to read, they’ll come up with
ideas. Then we’ll talk about them and then maybe modify them and then they can go
back into the lab and do the experiments and then they’ll interpret the data by themselves
and then come and tell me how they interpret it and we’ll discuss it and then eventually
they come up with things on their own and interpret things their own way and then I just
kind of critique it at that point. Now formally, I guess I meet with them individually once
a month. We have lab meeting twice a month where everybody gets together. And then
my door is always open and I usually walk through the lab 2 or 3 times a day just to see if
anybody needs anything. Sometimes I’ve been really busy lately too, so they’ve had to
kind of figure things out themselves. Because I’ve been writing grants lately. Most of my
students are fairly senior right now, so…

I think it should be flexible. I certainly understand the word structure. But, to the extent
that it implies something rigid, that’s probably not what you meant. It has to be flexible. I
mean I think when the students come in there’s a transition you know going back to one
of my themes, there’s a transition from dependence to independence. And students can
make that transition at their own pace. So early on, you might be, might just be real nuts
and bolts sort of things. There’s some hole in your academic experience you have to
teach them some set of skills, some knowledge that’s more didactic. And then you’re
emphasizing how that’s going to apply to this independent research career. I think you
ought to have, I guess what I found successful in the relationships is we have regular
points of contact, so in my case that means we schedule weekly meetings with the
understanding that we’ll easily be able to keep two or three each month, but if we miss
one it’s not a big deal because we’re meeting so frequently. And then to be able to be
available as needed if something comes up, so not everything, not every problem arises
right before our 1:00 meeting on Monday. You know, something happens on Thursday or
Friday that we need to figure out, I don’t think it should wait until Monday. So, that’s
kind of the flexibility. And then I think too if the student seems to be struggling to have
success or to know where to go, then I think I have to take more control of those
interactions. Here’s what you should be doing, tell me about this. I remember last week
you said you were going to do this, tell me the results. But then as they start to become
more confident in their independence, then I let them set the pace and the agenda and I’ll
just sit back and ask questions.
You know that’s more of a nurturing phase. You’re sort of building their confidence, building their skills. Giving them small challenges to push them and show them they can do it as they start to…you know I think another observation along this spectrum that you describe you know most grad students I think a lot of them think “well, crap, I’m, just doing this because my advisor said so, I’m not sure it’s really important.” So one of the big transitions that occurs is when you can get them to present their work to a group of people who don’t have to like them. send them to national meeting or something to present and they come back, really exhilarated that hey you know people talked to me like I was a smart guy or gal it was interesting, they’re interested in what I did. And it seems like this is valuable stuff. So building those kinds of experiences in, you know I think that’s where some of these graduate student research days or and we have all these one day symposia on this that or the other and I think those are valuable to students. Professor X, or Y, or Z whom you’ve only read in the literature or whose not on your committee and doesn’t have to like you, says nice things about your research and that makes you feel good. And then I think that you asked why I liked this job. One thing I like about it is that I don’t have to deal with anybody very long. They’re all nice people and they’re fun but I get new experiences all the time because I send them on their way. Train them up, get them ready, get them the skills, get them the base knowledge to go off and be an expert in some area they’ve carved out and then send them along to be successful.

It can take a lot of forms. A student can come by every other day to chat and report on what he or she has accomplished, or can come by once a month. It can really vary quite a bit. It depends on the person. And as long as progress is being made, I wouldn’t say it’s necessary for students to report in with any particular frequency.

You have an objective, which is to solve a particular problem, and the problem kind of defines the process. If it’s an experimental problem, then the student goes into the lab, makes measurements, makes sense out of them, comes back with the results. If the student’s doing modeling and simulation and he or she finds the software that will properly tackle the problem, makes the runs, organizes the results, comes back. Process is defined by the problem, I think. Of course, the personality of both people involved has to enter into it also. I wouldn’t try to force anyone into a particular mold. I think best to let them develop their own style of work and interaction. It’s, it’s certainly their mentor’s responsibility to make suggestions and provide an example. But you should try to work with the personality of the person you’re collaborating with. Not try to force them into a mold. There’s no one way to do this job.

Some students need a lot of structure in mentoring. Some need to the point of we’re going to meet weekly as we develop your research questions and I challenge you to read the literature and synthesize what you’ve found and some don’t need that kind of structure at all. But they need more intense availability.

It needs to be responsive to where the student is and what they’re willing to accept. And, it needs to be responsive to probably the maturity level of the student, too. In exchange, it’s evolved. Some of the mentoring now takes place by telephone and electronically and
through Skype that we didn’t do years ago. You know. All of it was one-on-one as we’re sitting down now, but that’s not realistic anymore because we have students that live in Atlanta, Huntsville, Mobile, and Texas, and so you don’t necessarily get the same opportunity to mentor them in person.

the process…well, there are definitely, what would you call them, hurdles or steps in their graduate program that are formal that they must do, and some of those are academic advising that occur throughout the semester, and some of those are group mentoring for a specific purpose, like their research design or execution of their methods. And those are pretty formal steps and the university has checks and balances along the way. So there are examination periods and that certifies that they have been appraised by the faculty to make sure that they, been assessed by the faculty make sure they have certain knowledge and skills. But that’s really only part of it. Hmm. I think part of it is also self correction. Part of it is they learn what’s suitable or appropriate. They’re learning professional roles probably as much as what they want to emulate and what they don’t want to do from their exposure to faculty and other students. And, to some extent alumni. I think some of the mentoring is formal and some of it is informal and observational.

So, I think that part of it is kind of being responsive to what is their interest and needs. And some of those coincide with steps of the program. And, some of them are apart from that. So, it’s probably different for each one. I think there’s probably hallmark steps that we build in as corrections and as progress indicators like advancing to candidacy, but that’s not really all of it. There’s a lot that goes on before and after that. I keep coming back in my mind of pushing. Pushing them to try to do more, to exceed, to not be satisfied with just what’s adequate, you know? To try to do even more.

So I think that’s part of the steps of mentoring is having them understand and get out of their comfort zone to become a scholar, to become somebody that exceeds what they could do when they came in.

I think at first it’s you know you try to help them with their classes and what to do. You know, here’s the graduate school website, and here’s BlazerNET, and you know all of the various and sundry things you have to know. And then, you know here’s the checklist, these are the prereqs, come see me at the beginning of every term. And like, you asked previously, there are people that do their work and some that don’t and so of course, those that are more proficient in accomplishing their work, those are students that you’re going to take more time to assist because they want to know and you want them to know. So, when they email you about what are the better books for ethnography, or what are the better books for biography, or you know. And you say, “here are a few, look at these.” So, I you know after I guess you get a basic framework for what is necessary to do within the university expectations, then the mentorship takes its own course.

Sure, for the most part the relationship starts when the student comes, but the interaction is fairly limited. Well there, you know might check in with coursework and things. Umm at that point, it there is research related work that the student wants to do and can and so forth, the mentor can be helpful in that, but it really starts in our department, we have two
sets of comprehensive exams. And you pass the first one, which is very general subject matter sorts of things. And then when you start to get ready for the next one is where you and your mentor get down to work because the way we do it is that the second set of exams is focused on your planned research and how you’re going to do it. It’s kind of a prequel to the proposal. And so, the student has to come up with a concept paper and so forth. So, that’s where you really get down to work and start that cycle of feedback. But still, it’s not as intense until well it just sort of from there on it just sort of gets gradually more intense or you know, more meetings or more a little more of everything. Although it tends to lighten up during the data collection phase because the students are out there doing what they’re doing. And then when it comes back to writing the results and so forth, it gets a little intense again. Yeah, that’s basically the process. And then there’s a little bit of toward the end also, moving into the “what do I do next” advising. In terms of do I do a postdoc do I go for a faculty position? Where do I go and that sort of thing.

So one of the first things I do when I bring a student, we talk about what they want to do, what their interest is. And I will probably spend a good term or more watching a student to see whether or not they have drive and ambition enough to work towards that. And again, we mentor them. We don’t lead them. I don’t think we can actually lead these students. They come to us on a daily or every other day basis, I see most of my students daily. And, they come to us and as about direction and such, and we guide them in that. But we don’t force them to work. I want to see what they can do on their own because in this business, it’s what you do on your own that will determine whether you’ll be successful in the future. When I say on your own, I mean not just solely by individual by itself, but to look at the drive of that individual.

If I had to describe it in a word, it would be lengthy. It is a long process learning the philosophy of science takes time. And it takes a lifetime. Our job is to get them off running in the right direction, so to speak. There’s a long journey that the person has to take as such. We have to them faced in the correct direction, moving down that path of their journey and such, and recognize that it can’t be done over night. When a student comes to me and tells me I’m going to work hard and finish in three years, they’ve just told me they don’t have a clue what the degree is about. So, it is a philosophy degree and we have to teach them the philosophy of science…the techniques, the technical components and such…that’s not a big deal. So, you’ve got to recognize it’s a long process.

They’re hard to describe and they’re probably variable for individuals and such. They’re variable among students, as well. Some, you know to be successful with those pillars we talked about earlier, you have to be able to read, write, think critically, make good common sense judgments. Some students are better at some components of those than others. So you may have a student that writes well and another one that doesn’t. and you’re going to have to work harder with that student who doesn’t write well. And one may have a better work ethic and the other one you have to encourage a little bit more to get things done. So, the first phase is just getting them moving in a direction and that can vary from six months to a couple of years, to tell you the truth. You know, get them moving so that they have to at some point in time recognize that they’re training to be a
professional biologist. They’re training to be a professional biologist and they have to take it and own it, in my opinion. Instead of always coming back to me, you know. The dog that you teach to fetch. You throw the stick, he brings it back, he waits for you to do it again. You throw the stick, he brings it back, he waits for you to do it again. You can’t have that with a student, you know. They have to recognize that once they get going, it’s incumbent upon them to start doing some of the things that we’re training them to do on their own. That’s hard for a lot of students because they won’t find the time to do it. Convincing the student to go to the literature, for example, and start to search it on their own to find things. It’s hard to do. Oftentimes they wait for you to find something and give it to them. but in some point in time, they start doing it on their own and they start bringing you stuff and that’s good. yes, so I guess you get them going in the first phase, but then the next phase depends on what are their weaknesses and strengths as to whether or not you’re going to have to put emphasis into them working in the lab every day or if you’re going to have to work with them on their writing or reading skills or something like that. That’s student specific… It’s within that last year. it’s usually within the last year where they start to do those type of things. I wish they would do it in the first year, but oftentimes it’s the last year [laughs].

I think organization. You have to have good organization. Well, number one you have to have ideas. You have to have ideas and they have to fit into some sort of niche in your research plan, in my case, where they’re going to fit in. and once they fit in, then we have kind of a set outline or organizational structure where they know that they, okay, here’s the project you’re going to do. Within this amount of time you’re going to have to have a proposal. Then we’re going to be doing research, okay? Then at that point, we’ll try to get publications, etc. so there has to be kind of a structure. You know, well structured. And I’m not great at that because I have too many students. But, it’s very clear once it’s like, hold it. you should be having your proposal and you say try to get it done in about two weeks and we’ll go over it and help you write it and stuff like that. And so, that’s were the structure fits in, okay, as far as interacting with the student. You also start to try to think in interacting with the student and developing the program where are they going. You know, where might they fit in. We’re almost now at kind of an intermediate thing because anymore, if you’re doing master’s degree, you’re going on to a PhD somewhere. If you’re doing a PhD, you’re going on to a postdoc somewhere. And so it’s kind of like it jumps in academic where periodically…I’ve had a couple who’ve done fellowships in Washington DC. And from there, they come back and they’ve actually gotten jobs with either federal or state agencies and things like that. And so, you’re trying to prep them for something where they can make the cut in a specific area.

My first thing is just how do I get them to do research that can get them publications. Okay? And get them to start thinking in such a way that they can develop good quality scientific research. That will lead to the publications, that will lead to their jobs. As well as teaching. If we’re interviewing someone, if they don’t have teaching experience that’s a big deficit for me. we would not hire someone who does not have teaching…the main thing we would look…do they have good research, can they external funding. But if we have 5 of those people and one has good teaching experience, they’re going to get the job.
APPENDIX G

ANSWERS TO REFLECTION QUESTION
Answers to Reflection Question

**P1**
They should be prepared to learn from mentor, excited about the research, able to accept constructive criticism, dedicated and motivated. They should not be lazy, arrogant or sloppy.

**P2**
I think the key part of the question is “who is prepared to be mentored”. I think most doctoral students walk into programs thinking that they need to demonstrate to mentors how intelligent, or independent, or hard worker they are or can be. By walking in with such mind frame, they are not prepared to be mentored; their focus is to “show off” rather than to “receive mentorship”. Mentors need to learn to recognize that and help students to develop a mindset of being “mentored”. This requires conversations, time investment and trust.

**P3**
A student that is prepared to be mentored is also internally motivated to succeed and willing to take advice to reach goals. They are generally more open minded or open to taking advantage of or learning from every situation.

**P4**
Key characteristics for a student ready to be mentored include openness (willingness to accept all feedback), desire to learn – real passion, ability to be reflective, high emotional intelligence. The student must have good self awareness. What he/she can do well and the ability to recognize the signs when things are not going well. At this point the student must have the confidence to ask for help.

**P5**
The student need only be eager to become a full-fledged member of the research community in his or her chosen field.

**P6**
My experience indicates that doctoral students who are genuinely interested in mentoring approach faculty after speaking with their peers, who share positive and negative experiences. These students are respectful, yet know to request dedicated advising to develop original ideas for scholarship, explore methodologies, learn effective protocol, build needed contacts and engage with study participants. Successful mentees accept difficult (and even extracurricular) assignments from faculty members, recognizing that wisdom and capacity emerge through teaching, service and scholarship challenges. I discourage doctoral students form social comparison, since each progresses at a different pace, yet I have observed peers who exhort others to request mentoring from seasoned faculty. In a nutshell, the mentoring mindset is a desirable attribute for successful doctoral study that may be fostered by dedicated and responsive faculty.
Doctoral students who are open to mentoring and reciprocal relationship to learn together is what it takes! Neither the mentor of the mentee can have the mindset that they know it all. A doctoral mentee has to be autonomous. That is to say, as a mentor we cannot be expected to let students know due dates, formatting expectations, or be in our offices when students want us to be here. They have to make appts., respect our time, and see the program as a process rather than a bunch of hoops to be passed through. Over my 16 years here, beginning 17, I have mentored over 25+ doctoral students mostly in the methodology. For the most part, most are mature and responsible students. This is part of my position that I so enjoy!!!

I think the mindset is humble, inquisitive and open to new ideas.

If the student is prepared to be mentored, then they should enter w/ an open mind. Preconceptions can often lead to problems. My perception is that many of them are very confused as to what to expect.

Energetic enthusiasm toward the field of study; good work ethic; an understanding of the importance of knowledge in society; altruism; open to evaluating new ideas; enjoys open discussions and does not quickly jump to conclusions or quickly form opinions.
APPENDIX H
TRANSCRIBED INTERVIEW
Participant #5  
7/31/2012  
Research Professor, ENG

TRANSCRIPT

KC:  How many years have you been teaching in higher ed?
P5:  Let’s see almost 10 years here at UAB. Oh, but I didn’t start teaching as soon as I arrived.
KC:  Okay.
P5:  Um let’s see about 2005 to now, so seven years at UAB. And five years at Penn State. And three years in prep school, high school. Once upon a time.

KC:  Please tell me about your educational and professional background.
P5:  My training is in chemistry. BS in chemistry, MA in chemistry, PhD in physical chemistry from Cornell, 1977. What were the other aspects?
KC:  Your professional background.
P5:  Let’s see, I’ve worked as a research staff member at MIT for 10 years. Did a postdoc at Princeton. That’s where I switched to engineering. That was in mechanical and aerospace engineering department, so I switched from science to engineering there. Then, worked in chemical engineering as a research staff member at MIT. Then, went to Penn State in materials science and engineering for five years, then moved to Sandia National Laboratories one of the national labs…their combustion group in Livermore California for eight years. Then, moved here in 2002 the mechanical engineering department. Which, is my natural home, I think.

KC:  Okay. What led you to a career in academia?
P5:  I’m just attracted to the environment. Although I’ve always thought that trying to do one’s best at both teaching and research was a very difficult task. And I like the atmosphere at Sandia National labs the government lab where I could focus on research. Not that it was what I preferred to the teaching, but at least it was only a full time job,
instead of two full time jobs. Um but there’s also a lot of nonsense at the government labs that one has to put up with that kind of detracts from the research environment. Although, it was the one of the nicest and most intelligent group of people I ever found myself in the midst of. But I just like the environment in academia. One’s free to pursue one’s interests. Although, I think in industry, one can do that just as well with a little bit of patience and creativity.

KC: How many students do you mentor on average at one time?
P5: Umm… three.
KC: And when did you start mentoring students?
P5: I believe it was 2005, when I began teaching. At least here at UAB. But I did at Penn State. I mentored students also. Penn State was ‘89 – ‘94.
KC: So, what kind of students do you mentor? Are they just in mechanical?
P5: They’re in our environmental healthengineering program first and that has evolved into our interdisciplinary engineering PhD program. But its home is in mechanical engineering. It was Bharat Soni, our department chair, who put that program in place. So, it’s for all engineers, but it started in mechanical engineering.
KC: Okay.
P5: And I’ve mentored a few master’s students, but mostly PhD students.

KC: So describe the kind of mentoring you do…dissertation…I take it you’re on committees.
P5: Right. One doesn’t have much influence and I don’t think that this is just characteristic of UAB, but of all the places I’ve seen. And I was involved with students a good bit at MIT during the 1980s during the 10 years I was there. Although I wasn’t the chairperson of anyone’s committee. The minor committee members…I think it’s the chairperson of the committee who has by far the most influence. I haven’t seen too many cases where any of the other members of the committee were ever called upon to have much input to the progress of the student’s research.
KC: So the three that you mentioned on average, you’re the chair of their committee?
P5: Right. Yeah, I don’t even count, don’t know how many other committees I may have served on. Not a whole lot. Um some, but as I said, I was never called on to have much input or any input into the progress of their research.

KC: So are these students also in your lab?

P5: They’re…I’m an experimentalist, so. Well, I do have one student who’s doing simulation, modeling simulation work. But, and another who’s doing, has done experimental work with Southern Company, and one student who’s doing work in the laboratory that we’ve set up. So I guess you would say it spans the whole range of students who have full time jobs and are able to use the work that they are doing in connection with their jobs as their research. Um, which is ideal if they have full time jobs and perhaps our older students with families. Umm to modeling and simulation work where the student just does calculations using computer software. And then experimental work in our little lab. I’ve forgotten what your original questions was, though I think I got off on a tangent.

KC: No, no you did very well describe the mentoring that you do. Also, are the students assigned to you or do they choose?

P5: It’s a negotiation. If a student comes in. Ideally I think it works like this. That a student comes into the department and meets all the faculty, goes to seminars, learns what everybody is doing and then picks a couple of faculty whom he or she thinks, he or she is most interested in. I think it’s a, I always thought that one had to choose not only the topic of the mentor, potential mentor, but the personality of the mentor. You want to make sure that you’re going to be compatible with that person’s style. Um and then the student goes to talk to the faculty members and sees if they have support for research, if the student needs it, maybe if he or she is full time employed and doing work with Southern Company, then say they don’t need support. Which is certainly an advantage from the mentor’s point of view. But I wouldn’t take a student whose work I didn’t feel qualified to supervise.

KC: So, what is the purpose of the mentoring relationship?

P5: I think it’s to give the person space and guidance to develop his or her full potential. I think it’s best if one treats his student whom one is mentoring as essentially
and equal with just a little bit less experience. So there’s guidance and setting an example for how to approach one’s work and one’s career. And then there’s the real specific, technical guidance. Just, helping the student over technical hurdles that arise in connection with the research. The student will know more than the mentor after not too long a time, after six months or a year about his or her project, but the mentor has wider experience and can point out other directions or other ways that similar problems have been solved. I like to picture us working shoulder to shoulder though on a common problem or at least a problem that is of great interest to both of us.

KC: What are the characteristics of an effective or successful mentoring relationship?
P5: Everybody is different, every mentor is different and every student is different. I don’t think there’s a formula. How did you phrase your questions again?
KC: What are the characteristics of an effective or successful mentoring relationship?
P5: Uh-huh. [pause]
KC: Do any of them have anything in common?
P5: The most satisfying relationship from the mentor’s perspective or from my perspective is when the student comes back with something really new and different that never occurred to me. that’s the happiest outcome. But I think as long as one gives the student space to follow his or her intuition and leads that develop in the course of the research, be careful not to stifle creativity or … let the student make mistakes also. Because what one thinks may be a mistake might not turn out to be a mistake and also that’s part of the learning process is to let the student follow leads and evaluate them and find out whether or not they’re fruitful. But to have the student come up with something truly original is certainly the most exciting and satisfying thing of all.

KC: This one’s a long one. What are the characteristics of a doctoral student who appears to be prepared or open to benefit from the mentoring relationship?
P5: I like it when the student listens well and takes notes, if that’s necessary. Actually, seriously considers the suggestions that one makes. Doesn’t necessarily follow them blindly. At least remembers what you said and reacts to it and comes back with some comment or evaluation of what one is suggesting. It works both ways. I like to view it as
a collaboration. And some of our students are in their thirties and have wide experience with life and even with research, so are equals with every respect, not just different in age. Not even much different in age… or experience. I guess I can’t say that almost every student that comes through our door isn’t very different from me in age. [laughs].

KC: So, going back to the three students on average. What is the, are they usually in their thirties by the time they try to get a PhD?
P5: Uh one was in his forties. Um other one is in his early forties and one is I think is in his late twenties, so they are older students.

KC: Okay.
P5: Of the three that I have right now, one is actually in his early sixties. The one I mentioned who was in his late forties is finished already, he’s graduated. So, I don’t know whether that’s an unconscious selection process that I’m going through. My highest criterion on the practical side is can they write a decent English sentence. Which is hard to find anymore. Although I’d say organizing one’s ideas on paper is probably more important than constructing a good sentence.

KC: What are the characteristics of a doctoral student who does not seem to be prepared to be mentored?
P5: Hmm. I suppose if a student is just in a PhD program because he or she has nothing else better to do, but that can happen just because the job market is not good. Um if the student won’t participate in a collegial relationship...umm and make progress and come back with ideas and react to one’s suggestions. If it doesn’t, if the relationship doesn’t work in two ways, I think that’s the main thing that could cause it to break down. Difficult to judge that up front, I think.

KC: Do you have any idea how the students overcome the challenges?
P5: It does take a good bit of discipline. The student needs to take the time and make the effort to master the work that’s already been done in the field, which is a daunting task these days because there’s such a huge amount of information out there. And the kind of engineering that we do has gone on for 150 years or more. It’s just an incredible amount of material and some of it is just extremely high quality or a lot of it is. So to get one’s arms around that isn’t easy. What was your question again?
KC: How the students overcome challenges.
P5: So, that would be the foundation would be to education oneself with what’s already been done. And then experimental work or simulation work can be very discouraging because one can go for a long period of time just failing over and over and over again, so patience is necessary. Um personality that doesn’t allow one to get completely discouraged and give up when things aren’t going well. Then one does some imagination to see one’s way around problems to see what’s of interest and what’s new and what’s in the data one has before one. Following leads in experimental work is… knowing what direction to take an experiment is really quite an art. That I think is what makes a good experimentalist. And the same thing is true in simulation, how to perform a set of simulations that will produce results that are of interest and make sense. It’s not so easy. So one has to be able to see beforehand what is going to make an interesting story and then if it doesn’t work out, to modify it so that it will and does. You need to be able to tell a story in the end that is of interest to other people in your field. Tell them something they don’t know already.

KC: What are your perceptions of how the student benefits from the mentoring relationship?
P5: I think the most valuable thing when all is said and done is just being able to observe a successful scientist or engineer at work and see how they cope with life, with their work, with all the demands that are placed upon them. Then there’s the other side of just the particular useful things that one learns from a mentor about how to approach the real technical problems. And how the mentor relates to you and the other students, assuming that you’ll be placed in a role where you supervise other people, either in academia or industry.

KC: What is the outcome of the mentoring process for the student?
P5: Student gets his or her license to practice, so to speak, with the degree. Umm…and I think the most viable thing is just the skill and the resources to be able to solve, in our case, engineering technical problems. The specific area in which one works I think doesn’t make much difference at all. It may determine the first job that one gets, but I
don’t think it determines where one ends up working in five or 10, 15 years later. I think
the most important thing is to provide skills and the ability to tackle problems that
particular contents and that’s so important. Although the student should be a leader in his
or her field upon graduation. In his or her particular small area of expertise. I think the
more different areas one works in, the more powerful one is in tackling new problems
that one encounters in academic research or industrial research or industrial management.

KC: Are there any benefits to you, as the mentor?
P5: A lot. It um multiplies your ability to solve problems, to accomplish meaningful
work, many-fold. And one has the satisfaction of seeing the young people he or she is
working with grow. One really can’t do this job by him- or herself. The research
component. I shouldn’t say that, that’s a bit of an exaggeration, but it just makes you
much stronger to have good students to work with. One could do it alone. Just wouldn’t
get as much done. And the students give you ideas in addition to generating data,
simulations, whatever, that’s the most important thing. When they come back with new
stuff you didn’t think of.

KC: How would you describe the structure of a mentoring relationship between a
graduate faculty member and a doctoral student?
P5: It can take a lot of forms. A student can come by every other day to chat and
report on what he or she has accomplished, or can come by once a month. It can really
vary quite a bit. It depends on the person. And as long as progress is being made, I
wouldn’t say it’s necessary for students to report in with any particular frequency.

KC: How would you describe the process of mentoring graduate students?
P5: You have an objective, which is to solve a particular problem, and the problem
kind of defines the process. If it’s an experimental problem, then the student goes into the
lab, makes measurements, makes sense out of them, comes back with the results. If the
student’s doing modeling and simulation and he or she finds the software that will
properly tackle the problem, makes the runs, organizes the results, comes back. Process is
defined by the problem, I think. Of course, the personality of both people involved has to
enter into it also. I wouldn’t try to force anyone into a particular mold. I think best to let them develop their own style of work and interaction. It’s, it’s certainly their mentor’s responsibility to make suggestions and provide an example. But you should try to work with the personality of the person you’re collaborating with. Not try to force them into a mold. There’s no one way to do this job.

KC: Is there anything else you would like to add?
P5: No, but thanks for giving me the chance to reflect on the problems and the process. I think UAB’s got the right atmosphere and the right approach. At least every part of it that I can see in the school of engineering.

KC: So I’m not going to refer to you by name in my final report. I will refer to you as Participant 5.
P5: Okay. Very good. good to know that.
KC: Thank you for your time.

END OF INTERVIEW
APPENDIX I

INSTITUTIONAL REVIEW BOARD APPROVAL
Form 4: IRB Approval Form
Identification and Certification of Research
Projects Involving Human Subjects

UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWA00005960 and it expires on January 24, 2017. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56.

Principal Investigator: CARTER, KELLIE RENE'
Co-Investigator(s):
Protocol Number: X120409010
Protocol Title: What Constitutes a Mentoring Mindset in Doctoral Students? A Phenomenological Study of Graduate Faculty Experiences at a Research I University in the Southern United States

The IRB reviewed and approved the above named project on 4.24.12. The review was conducted in accordance with UAB’s Assurance of Compliance approved by the Department of Health and Human Services. This Project will be subject to Annual continuing review as provided in that Assurance.

This project received EXPEDITED review.
IRB Approval Date: 4.24.12
Date IRB Approval Issued: 4.24.12

Marilyn Doss, M.A.
Vice Chair of the Institutional Review Board for Human Use (IRB)

Investigators please note:

The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.