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The Predictability of Types of Mentoring Relationships on The Perceived Performance Behaviors of College Undergraduate Students

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THE PREDICTABILITY OF TYPES OF MENTORING RELATIONSHIPS ON THE PERCEIVED PERFORMANCE BEHAVIORS OF COLLEGE UNDERGRADUATE STUDENTS

DISSERTATION

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By

Jeffery Lindsey, Ed.D.

Texas Southern University, 2021

Professor Bernnell Peltier-Glaze, Advisor

The purpose of this study was to examine the predictability of types of mentoring relationships on the perceived academic success, retention status, graduation status, and progression status of undergraduate students in the United States. Specifically, this study focused on the predictable relationship between types of mentoring relationships such as peer mentorship, faculty mentorship, e-mentorship, and group mentorship on the perceived academic success, retention status, graduation status, and persistence status of undergraduate students.

For this study I utilized a correlational design. A survey was used to collect quantitative data from undergraduate students. A purposive sample of the population was necessary for this study. The sample consisted of undergraduate students who are enrolled at two universities located in two regions of the United States (Southcentral and Midwestern). The data analysis employed in this study was simultaneous multiple

regression. The simultaneous multiple regression statistical design determined the relationship or association of the variables. The identified population was assessed on their perceived academic success, retention and graduation status, and persistence. The standardized regression coefficients of the multiple regression measured how well the given variable can be predicted using a linear function of a set of the other variables to establish the relationship between the variables.

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DEDICATION

I thank God for giving me the strength to persist toward a doctoral degree. I would like to dedicate this dissertation to my parents Jeffery and Pamela Lindsey. My parents are always in my corner providing me with love, support, and cheering me on throughout my academic journey. Thank you for instilling in me that whatever I do, do it well.

To my three sisters Candace Lane, Tiffany Lindsey, and Taulany Lindsey, thank you for rooting for me. To my grandmothers: Pastor Georgia Lane and Minister Lillie Lindsey, thank you for your prayers and spiritual support. To my late grandfathers: Elex Lindsey and Pastor Alphonso Lane, thank you for watching over me during my journey. To my Lane and Lindsey family, thank you for cheering me on to the finish line.

I hope that I have shown you all that anything really can be done if you put your mind to it. As one of my mentors stated, "you do not have to be the smartest person in the room, but you must be persistent and determined." I hope that my journey can be an inspiration to you all to not be afraid to go after that job, degree, or next big move. You can do it and you have what it takes to accomplish your goals.

ACKNOWLEDGEMENTS

The topic of this dissertations aligns with my aspirations of becoming a university president. Institutions of higher education are always examining strategies that can positively increase performance of undergraduate students. Mentoring relationships have been recognized as one of the most well-known factors that can help students succeed in college. As an undergraduate student, I was fortunate to have numerous mentors to help guide and support me on my academic journey. I would like to acknowledge all mentors who are committed to providing academic, career, and emotional support to undergraduate students.

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great academic, career, and life advice. Dr. Todd provided me with academic support and encouragement during this process.

Additionally, I would like to acknowledge one of my mentors, Dr. Jack Thomas, president of my alma mater, who told me I owed him three degrees if he were to mentor me. His mentorship is what led me down this scholarly journey. I would like to acknowledge all of my friends who supported me on this journey. I appreciate all of your support and motivation throughout this process.

CHAPTER 1

INTRODUCTION

For decades, higher education has been woven into the fabric of the American dream. Traditionally, the American dream is to obtain a college degree to become more employable and receive higher income. However, for many college students, higher education institutions may be viewed as a foreign environment that encompasses a new language (academic) and higher standards than high school (Sinanan, 2016). Consequently, undergraduate students have difficulty navigating the college environment and overcoming obstacles to be able to perform at a high level.

Undergraduate enrollment in degree-granting higher education institutions climbed to 26% (13.2 million to 16.6 million undergraduates) between the years 2000 and 2018 according to the National Center Education Statistics (NCES, 2020). Moreover, undergraduate enrollment is assumed to increase to 17 million by 2029 (NCES, 2020). Although undergraduate enrollment has increased among post-secondary institutions, grade point average (GPA), retention, persistence and graduation rates are alarming.

Graduation rates among college students is a significant concern for post-secondary institutions (Talbert, 2012). According to NCES (2020), approximately 40% of students who began their bachelor's degree at a four-year college or university in 2012 did not graduate within six years. Additionally, data shows that during the 2017-2018 academic school year 66% of students who attended least selective four-year colleges

and universities (colleges or universities that have higher acceptance rates) did not earn a bachelor's degree within six years (NCES, 2020). Demetriou, Meece, Faker-Rich, and Powell (2017) further noted close to 90% of first-generation college students enrolled in a post-secondary institution fail to graduate within six years. The lack of degree attainment among undergraduate students can be detrimental to the future of society. Degree completion among undergraduate students in the United States is crucial regarding meeting future workforce demands, goals for national economic prosperity, and global competitiveness (Demetriou et al., 2017).

Retention of Undergraduate Students

Retention of undergraduate students remains a key focus for institutions of higher education (Simmons, 2013). NCES (2020) suggested that nearly 40% of students enrolled at least selective four-year college and universities were not retained during the 2017-2018 school year. Demetriou et el. (2017) stated post-secondary institutions must focus on the issue of undergraduate retention. Additionally, Talbert (2012) posited that undergraduate retention continues to be a crucial problem for institutions of higher education.

Research showed that poor retention rates among minority students are prevalent within higher education institutions (Brittian, Sy, & Stokes, 2009). Black undergraduate males have the lowest retention rates among all races and sexes regarding institutions of higher education (Sinanan, 2016). Undergraduate students drop out of college for a variety of reasons, such as low self-esteem, academic motivation, first-year GPA, and feeling marginalized by the campus environment (Yomotov, Plunkett, Efrat, & Marin, 2017). Moreover, Yomotov et al. (2017) asserted that undergraduate students are more

likely to dropout due to the lack of social support while attending college. Some colleges and universities are having difficulty retaining their students which results in students having substandard graduation rates (Simmons, 2013).

According to Soria and Stebleton (2012), some college students have low confidence in their academic ability and preparedness for the rigor of college coursework. Moreover, Seirup, and Rose (2011) stated 25% of all undergraduates will be placed on academic probation. Additionally, students who are placed on academic probation receive lower than a 2.0 grade point average and struggle with transitioning and adapting to college life (Seirup, & Rose, 2011).

Although undergraduate student enrollment has increased for colleges and universities, college students' persistence continues to be a major concern (Gentry, 2014). Nearly 35% of undergraduate students drop out for academic reasons, while 65% leave college willingly (Morrow & Ackerman, 2012).

Mentoring Relationships

Many researchers, such as Perez (2017), Kring (2017), Brooms and Davis (2017), have examined the phenomena of mentoring relationships and undergraduate students' performance behaviors. An increasing number of higher education professionals are exploring the association between mentoring relationships and undergraduate students' perceived performance behaviors.

Research showed that there is a lack of agreement on a common definition for mentoring (Crisp & Cruz 2009). Crisp and Cruz (2009) claimed that four constructs can help define mentoring: (1) psychological and emotional support, (2) support for setting goals and choosing a career path, (3) academic subject knowledge support aimed at

advancing student's knowledge relevant to their chosen field, and (4) specification of a role model (p. 538). Expounding on the literature on mentoring, Eller, Lev, and Feurer, (2014) identified several key components of an effective mentoring relationship: role modeling, open communication and accessibility, goals and challenges, passion and inspiration, caring personal relationship, mutual respect and trust, exchange of knowledge and independence, and collaboration (p. 816).

According to Crisp, Baker, Griffin, Lunsford, and Pifer (2017), mentoring programs and practices have become more prevalent at colleges and universities across the nation. Mentorship practices within colleges and universities can be essential in improving graduation rates, reducing discrimination among marginalized and underrepresented groups, and increasing participation in STEM (Crisp et al., 2017). Crisp et al. (2017) further noted that for decades institutions of higher education have utilized mentoring as a retention strategy, and research has shown that mentorship is positively correlated with developmental and academic success.

Shook and Keup (2012) suggested that with regards to higher education, peers have a strong influence on student development. In higher education, peer mentoring relationships play a vital role in student success, satisfaction, learning and academic performance, persistence and retention, and may impact college students' transition to campus (Shook & Keup, 2012). Additionally, there are several benefits of undergraduate students developing mentoring relationship with faculty, staff, or administrators such as having a confidant, receiving guidance on how to overcome obstacles, being encouraged, and having a sense of belonging to the college or university (Luedke, 2017).

Sinanan (2016) suggested to increase retention among African American students attending PWIs, African American students need role models that resemble them. Thus, having role models on campus who resemble students will help undergraduate students feel connected to the campus.

Undergraduate students who establish relationships with faculty members are more likely to persist toward completion of their courses (O'Keeffe, 2013). Moreover, recurrent faculty-student interactions show that undergraduate students are academically engaged and results in improved performance in college (Komarraju, Musulkin, & Bhattacharya, 2010).

There is a lack of research related to undergraduate students who utilize electronic mentorship as a method to establish mentoring relationships. As it relates to virtual mentorship, Bierema and Merriam (2002) believed e-mentoring is a computer mediated, mutually beneficial relationship between a mentor and a protégé' which provides learning, advising, encouraging, promoting, and modeling that is boundaryless, egalitarian, and qualitatively different than traditional face-to-face mentoring. Additionally, Goldman (1997) posited that mentors who may not be able to meet with their mentees face to face can communicate and share their knowledge and expertise virtually.

Colvin and Ashman (2010) stated that a major benefit of undergraduate students having a mentor is improved academic performance. According to the results of Budny, et. al. (2010) study, mentorship is directly related to improved academic performance of undergraduate students. More specifically, their study showed that mentoring

relationships among undergraduate students helps to increase GPA, decrease the number of students on probation, and increase the number of students who receive honors.

Plotkowski and Joseph (2011) contended mentors encourage students to participate in extra-curricular activities and conferences related to their major. Therefore, students who have a mentoring relationship are more likely to be active on campus and return to college.

With regards to graduation rates, research showed mentoring relationships can impact undergraduate students' graduation rates (Ricks, Richardson, Stern, Taylor, & Taylor, R. A., 2014). Gibson (2014) stated mentoring relationships lead students to connect with professionals and build relationships that can lead to improved graduation rates. Moreover, Rhodes (2008) concluded that there is statistically significant evidence that students who are mentored are more likely to have higher graduation rates than students who are not mentored.

Mentoring relationships are directly related to undergraduate students' continuing their college education. According to a research study that explored undergraduate students' intent to persist, results revealed that college self-efficacy and perceptions of mentorship were the strongest predictors for undergraduate students' intent to persist beyond the first year (Baier, Markman, & Pernice-Duca 2016). Morrow and Ackermann (2012) contended that persistence among undergraduate students who have developed a mentoring relationship is more likely to increase. Also, according to Christie's (2013) steady, mentoring relationships can impact undergraduate students' persistence in college.

Crisp and Cruz (2009) asserted that students who are mentored are twice as likely to persist in college than students who are not being mentored. There exists a significant and positive relationship between mentorship and persistence among undergraduate students (Hu & Ma, 2010). Not only have previous research reported a significant relationship between mentorship and persistence, but studies have also shown similar results with mentorship impacting academic achievement, retention, and graduation rates. Thus, an empirical investigation is warranted.

Statement of the Problem

Low performance of undergraduate students remains a concern for intuitions of higher education. College students, more specifically, first generation, underrepresented undergraduate students encounter many challenges that prevent them from furthering their education and attaining a college degree (Ramos, 2019). According to Sato, Eckert, and Turner (2018) some common obstacles college students face are establishing new support groups, becoming accountable, and assuming new academic roles, which may result in students performing at a lower level. Moreover, high school students who are transitioning to college may find it difficult to navigate the college environment due to the absence of resources and support (Ramos, 2019). Undergraduate students are inexperienced individuals who lack the proper guidance and knowledge to successfully navigate the college environment and therefore, undergraduate students' academic performance is negatively impacted.

Purpose of the Study

The purpose of this study was to examine the predictability of types of mentoring relationships on the perceived academic success, retention status, graduation status, and

persistence status of undergraduate students in the United States. Specifically, this study focused on the predictable relationship between types of mentoring relationships such as peer mentorship, faculty mentorship, e-mentorship, and group mentorship on the perceived academic success, retention status, graduation status, and persistence status of undergraduate students.

Research Questions

Answers to the following questions were sought:

1. Do types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived academic success of undergraduate students?
2. Do types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived retention status of undergraduate students?
3. Do types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived graduation status of undergraduate students?
4. Do types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived persistence status of undergraduate students?

Significance of the Study

This study examined the predictability of types of mentoring relationships on the perceived performance of college undergraduate students. The study showed the importance of mentoring relationships within the context of higher education. More

specifically, the results of this study may guide higher education institutions to utilize mentoring strategies as a method to help increase GPA, retention, persistence, and graduation rates. Mentoring relationships provide undergraduate students with resources to easily transition to campus life, a sense of belonging while attending college, and encouragement. Additionally, this study may show that mentoring relationships positively impact undergraduate students perceived academic status, retention status, persistence status, and graduation status. Furthermore, the study has the potential to increase the awareness and understanding of the roles peer, faculty, staff, and administrators play in the overall success of undergraduate students.

Theoretical Framework

Research showed that role models such as mentors can positively impact performance behaviors among undergraduate college students (Chang, Buonora, Stevens, & Kwon, 2016; Shojai, Davis, & Root, 2014). According to the Social Learning Theory (SLT), coined by Albert Bandura in 1977, individuals learn by interacting with other people (Bandura & McClelland, 1977). Additionally, Bandura stated that by observing other human beings, individuals acquire a knowledge of new information and behaviors. Social Learning Theory has four key components: attention, retention, reproduction, and motivation. First, attention involves the individual paying attention to the role model. Second, the individual must retain the behavior that was observed from the role model. Third, the observer must duplicate the behavior that was observed. Finally, individuals must have a desire to show what was learned (Nabavi, 2012, p.10)

The present study focuses on the impact of mentoring relationships on undergraduate students' performance behaviors. According to Aschenbrener and Johnson

(2017), role models who support and mentor undergraduate students will positively impact their performance in college. Mentorship provides undergraduate students with new learned behaviors through their interactions and observation of a role model. In this study, the instrument Undergraduate's Perceived Performance Behaviors Survey is employed. The survey measures undergraduate students' perceptions regarding how mentorship impacts their performance behaviors. As it relates to the Social Learning Theory, undergraduate students who are mentored learn new information and behaviors that can help them improve their GPA, retention, and persistence toward graduation. Therefore, the Social Learning Theory provides the support for this study.

Research Hypotheses

The following hypotheses were formulated:

H_1: There is a statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived academic success of undergraduate students.

H_2: There is a statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived retention status of undergraduate students.

H_3: There is a statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived graduation status of undergraduate students.

H_4: There is a statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived persistence status of undergraduate students.

Assumptions

The following assumptions were made regarding this study:

1. It was assumed that types of mentoring relationships such as peer mentorship, faculty mentorship, group mentorship, and e-mentorship are significant predictors in the perceived performance behaviors of college undergraduate students.
2. It was assumed that data collected from the surveys will be accurate in identifying perceived performance behaviors of college undergraduate students.

Limitations and Delimitations

The following limitations and delimitations were observed in this study:

1. This study was limited to undergraduate college students.
2. This study was limited to college students who attended two historically black colleges or universities (HBCUs).
3. This study was limited to college students that associate themselves with a certain mentoring relationship (peer, faculty, staff, group, or electronic).
4. This study was delimited to undergraduates completing the survey based on their perception of their mentoring relationship.

Definition of Variables and Terms

The following variables and terms were used throughout this study by the researcher. These terms were operationally defined for the purpose of providing clarity and understanding to this research investigation.

1. Academic Success – refers to undergraduate students' grade point average.
2. E-Mentorship – refers to undergraduate students who seek career guidance, academic, social, and emotional support through online formats such as LinkedIn, Facebook, Twitter, Instagram, email, Zoom, etc.
3. Faculty Mentorship – refers to a professor who provides career guidance, academic, social, and emotional support to undergraduate students.
4. Graduation Rate– refers to the percentage of first-time, first-year undergraduate students who complete their program and attain a degree within four to six years of beginning their program.
5. Group Mentorship – refers to a group of undergraduate students who receive career guidance, academic, social, and emotional support from a mentor (peer, faculty, or staff) within a group setting.
6. Peer Mentorship –refers to an upper-class undergraduate or graduate student who provides academic guidance, advice, social, and emotional support to an under-classman or freshmen student.
7. Perceived Academic Success- refers to how undergraduate students' view their academic performance.
8. Perceived Graduation Status- refers to how undergraduate students see their progress toward graduating college.

9. Perceived Persistence Status- refers to how undergraduate students see themselves continuing through the next academic year.
10. Perceived Retention Status- refers to how undergraduate students see themselves returning with enough credits to progress to the next level.
11. Persistence Rate– refers to the percentage of undergraduate students who continue into their second year at a college or university
12. Retention Rate– refers to the percentage of first-time, first-year undergraduate students who return with enough credits to progress to the next level.

Organization of the Study

This empirical investigation is organized into five major chapters. Chapter 1 makes a case for the study and consists of the introduction, statement of the problem, statement of the purpose, research questions, significance of the study, theoretical framework, research hypotheses, assumptions, limitations, definitions of variables and terms, and the organization of the study.

Chapter 2 consists of an extensive review of related literature which focused on types of mentoring relationships such as peer mentorship, faculty mentorship, staff mentorship, group mentorship, and e-mentorship. Additionally, literature regarding the impact of types of mentorship on perceived academic performance of undergraduate college students will be discussed. Lastly, a review of literature on the benefits of mentoring relationships will be reviewed.

Chapter 3 explains the design of the methodology of the study and includes the research design, population, sampling procedures, instrumentation, validity of the instrument, reliability of the instrument, data-collection procedures, independent and

dependent variables, null hypotheses, and the statistical analysis. Chapter 4 presents the analysis of the data, a discussion of the results, and the data in tabular form. Finally, Chapter 5 offers a summary of the findings, implications, conclusions, discussion, and recommendations.

CHAPTER 2

LITERATURE REVIEW

This review of literature examined the impact of types of mentoring relationships on the GPA, retention, graduation, and persistence rates of undergraduate students in the United States. Specifically, this study is focused on the predictable relationship between types of mentoring relationships such as peer mentorship, faculty mentorship, e-mentorship, and group mentorship on GPA, retention, graduation, and persistence rates of undergraduate students. This chapter is divided into four areas. First, the literature explores student performance behaviors which consist of GPA, graduation, retention, and persistence rates. Second, this review of literature identifies and discusses the four types of mentoring relationships among college undergraduate students. Third, the literature examines each of the types mentoring relationships individually and its impact on GPA, retention rates, graduation rates, and persistence rates of undergraduate students. Finally, this literature review identifies effective strategies and challenges for mentoring relationships in higher education.

Student Performance Behavior

Undergraduate student performance behaviors, which can be assessed by grade point average, persistence, retention, and graduation rates, continues to be a concern for institutions of higher education. According to NCES (2016), the normal time to obtain a bachelor's degree is eight semesters for four-year institutions and four semesters to complete an associate degree from two-year institutions. In recent years, the time frame to complete a bachelor's degree has increased to six years (NCES, 2020). Graduation

rates can be defined as the calculated percentages of students who graduate or complete their program within a specified timeframe (NCES, 2016). Garcia (2013) maintained that institutions of higher education use graduation rates as indicators for student success and the effectiveness of the college or university. Garcia's (2013) study used the six-year time frame as an indicator for graduation rates. Similarly, Nguyen, Bibo, and Engle, (2012) measured graduation rates by utilizing the six-year time frame to degree completion.

The NCES (2020) described retention rates as the percentage of first-time undergraduate students who return to the institution the following fall semester. According to Talbert's (2012) study, retention rates were measured by focusing on the number of first-time students who returned in the fall semesters across a four-year span. Additionally, Talbert (2012) used the four-year and six-year time frame toward degree completion to measure undergraduate students' graduation rates.

With regards to persistence rates in higher education, persistence rates are measured by the number of students who continue their education through their third year and beyond. More specifically, from the lens of higher education institutions, persistence can be defined as a student who continues his or her education at any higher education institution (Burrus et. al., 2013).

According to Markle's, 2015 study that looked at factors that influence persistence among nontraditional university students, the researcher measured undergraduate students' persistence rates by surveying students at the end of three years based on if they graduated, were still enrolled, or dropped out. Students who graduated or were still enrolled at the end of year three were considered to have persisted in college (Markle, 2015). Similarly, to Markle (2015), a study conducted by Cataldi, Bennett, and

Chen, (2018), students completed a survey to determine if they stayed, left, or left without return. Persistence was measured based on the number of students who stayed at the end of a three-year period.

GPA is defined as the average obtained by dividing the total number of grade points earned by the total number of credits attempted (Merriam-Webster, 2021). Moreover, York, Gibson, and Rankin, (2015) posit that undergraduate students academic progress can be assessed through persistence, GPA, and retention. According to NCES (2016) GPA, graduation, persistence, and retention rates can be utilized by policymakers, states, and higher education institutions as indicators of performance behaviors of college students.

Mentoring

The term mentor originated from Greek mythology. According to the Greeks, Mentor was an individual who was appointed as a teacher and a protector to the son of a royal family (Van Vliet, Klingle, & Hiseler, 2013). Although the term mentor does not have a universal definition, researchers such as Sanfey, Hollands, and Gantt (2013), described mentoring as a relationship in which an older or more experienced person who has exhibited a level of expertise in his or her field takes an inexperience person (mentee) under the wing to help educate and motivate him or her to become successful. As it relates to higher education, undergraduate students are inexperienced individuals who require additional academic, emotional, and career guidance. Students may not be aware of educational resources or how to navigate their career path and therefore, mentors have the knowledge and expertise to provide advice and guidance to students.

Mentees who work with their mentor can develop a variety of professional skills. As claimed by Pfund, Byars-Winston, Branchaw, Hurtado, and Eagan (2016) mentoring can be considered a collaborative process where the mentor and mentee partake in tasks such as planning, reflecting, and problem-solving.

In the arena of higher education, a mentors' personality and skills are important in establishing a quality mentoring relationship. A good mentor is someone who motivates and instills confidence, provides a supportive atmosphere, and delivers feedback to a mentee (Sanfey et al., 2013). Sanfey, et al. (2013) further suggested that the mentor should be welcoming, accessible, enthusiastic, and have quality people skills.

While establishing a mentoring relationship, the mentor and mentee should determine expectations and goals (Sanfey et al., 2013). By agreeing on expectations and goals, the mentor and mentee will have a better understanding of their roles in the mentoring relationship. Sanfey et al. (2013) maintained that the mentor should encourage the mentee to participate on committees, get involved with professional organizations, and gain skills that will help with career development. Undergraduate students who are motivated to partake in extracurricular activities on and off campus are more likely to develop holistically, which can have a positive impact on their academic performance.

Mentors are important in the success of undergraduate students (Crisp et al., 2017). Mentors such as peer, faculty, staff, and alumni are utilized to help students succeed (Collier, 2017). Upper-class students and higher education professionals are considered role models who can provide inexperienced students with the necessary support to be successful academically. Van Vliet et al. (2013) contended that within academic settings, mentors are encouraging role models who are engaged in the student's

educational, professional, and personal growth. Moreover, through mentoring relationships, undergraduate students' outcomes such as career development, academic achievement, and degree completion can be positively impacted (Crisp et al., 2017).

Peer Mentoring

A peer mentor in the field of higher education is an undergraduate student who provides guidance, support, and practical advice to a mentee who is close in age and shares similar experiences and interest (Yomtov et al. 2017). Peer mentoring allows junior and senior level undergraduates students to serve as leaders by assisting with extra-curricular activities, course teaching, and tutoring (Walters & Kanak, 2016). Additionally, Walters and Kanak (2016) noted that peer mentors incorporate activities that can provide resourceful information to new students. Tenured undergraduate students have overcome similar experiences that first and second year undergraduate students may encounter and therefore, upper-class students who serve as mentors will have the knowledge and resources to effectively mentor inexperienced students.

According to Dennehy and Dasgupta (2017), peer mentors help undergraduate students realize they possess the skills needed to overcome anxiety and academic difficulties. Undergraduate students who overcome anxiety and academic difficulties will be able to focus on their studies. This can greatly improve students' GPA, retention, persistence, and graduation rates.

Within a college or university, peer mentoring is an intervention strategy that pairs a new or less experienced student with a more experienced student who will provide guidance and social support to the mentee (Yomtov et al., 2017). Peer mentoring relationships, specifically during the freshmen year, can give students a sense of

connectedness to the college or university (Sithole et al., 2017; Yomtov et al., 2017). Undergraduate students who are peer mentored feel a sense of belonging to the university, feel supported at the university, and feel like a dynamic piece of the institution (Yomtov et al., 2017). Furthermore, peer mentors provide undergraduate students with stable feelings of belonging and self-efficacy (Dennehy & Dasgupta, 2017). Therefore, students who establish a mentoring relationship with a peer will develop a sense of belonging to their college campus and are more likely to be active on campus, perform at a higher level, and return to college.

Peer mentorship is a viable strategy in fostering college student success (Collier, 2017). Collier (2017) asserted that there are three advantages of utilizing a peer mentoring approach: cost, availability, and effectiveness. Additionally, mentees view peer mentors as credible sources because they have recently gone through similar experiences and therefore, mentees are more likely like to listen to their peer mentor (Collier, 2017).

A study conducted by Graham and McClain (2019) revealed that black collegians who attended predominantly white institutions perceived peer mentoring relationships as important to their college success. Peer mentors help provide black males with a sense of belonging to an institution where they may feel like they do not belong. Results in this study revealed a positive correlation between mentorship and college transition, and a contrary correlation with impostor syndrome (Graham & McClain 2019). Additionally, mentees had higher sense of belonging in college than students who did not have a mentor. Minority students, specifically black males, need upper-class students to serve as role models who they can look up to and relate with. Role models will be able to help

black males combat negative feelings toward the campus environment, which can improve black males' performance in college.

Depending on the needs of the mentee, peer mentors' responsibilities may vary when providing mentorship to inexperienced undergraduate students. In Lewis' (2017) study, peer mentors were responsible for promoting participation in campus life. Rieske and Benjamin (2015) maintained that peer mentors attending Saint Peter's University focused on engaging first-year students academically. To help students become academically successful, Lewis' (2017) study revealed that peer mentors would attend his or her mentee's classes and take notes. Once class concluded, the mentor and mentee would compare notes and discuss what was taught in class. At Drexel University, peer mentors' responsibilities included having regular contact with mentees through meetings, phone calls, and email (Rieske & Benjamin, 2015). In addition, peer mentors assisted students in becoming engaged in the community and meeting new people. Lastly, Rieske and Benjamin (2015) noted that peer mentors who attended Paradise Valley Community College were held accountable for providing students with the proper resources to foster positive relationships inside and outside of the classroom and promote student engagement.

Peer mentoring can offer numerous benefits for institutions of higher education. Peer mentorship helps to provide first-time and inexperienced students with academic, social, and emotional support. Undergraduate and graduate students who serve as mentors assume a variety of roles that can help his or her mentee to navigate the college environment and achieve their academic goals. In addition, peer mentors help students to feel associated and connected with a college or university. Undergraduate students who

establish a mentoring relationship with his or her peers are more likely to attain a college degree, have better retention and GPAs, and persist in college.

Faculty Mentoring

Faculty members are essential to undergraduate students' college experiences (Fuentes, Alvarado, Berdan, & DeAngelo, 2014). Likewise, Fries-Britt and Snider (2015) maintains that it is crucial for faculty members to develop genuine relationships with their students. Faculty and students who establish an authentic relationship are more willingly to convey concerns and disappointments while creating a plan to move onward (Fries-Britt & Snider, 2015). According to Komarraju et al., (2010) students who develop a successful mentoring relationship with a faculty member are more likely to be satisfied with their college experience. Thus, faculty-student relationships can be vital to the development of undergraduate students' academic self-concept and increasing their motivation and achievement (Komarraju et al., 2010). Faculty members can positively impact undergraduate students' performance behaviors and therefore, colleges and universities need faculty members who are available, supportive, and show students that they genuinely care about their overall wellbeing.

Faculty of color at PWIs understand that undergraduate students of color can benefit from having a faculty mentor while navigating through college (Sinanan, 2016). Minority students attending PWIs need guidance and support from faculty members who look like them. Fries-Britt and Snider (2015) posit that students need someone to communicate with who is on their side and can assist them academically and emotionally. Faculty support can improve undergraduate students' dispositions about college environments and help to increase students' confidence in their academic work.

College students may be uncomfortable with asking professors questions pertaining to course work and personal topics. According to Patrick and Wessel (2013), students who develop a close relationship with faculty members become more relaxed about speaking with their professor. Similarly, a research study that focused on the involvement of faculty and mentoring on self-efficacy and academic achievement of African American and Latino college students report that college students' academic achievement improved when they feel comfortable to converse about academics and other topics with a faculty member (DeFreitas & Bravo 2012). Developing close relationships with faculty members will help ease students unsettled feelings about speaking with a professor and therefore, allow students to communicate about their interests, concerns, and class assignments. Students who have open communication with his or her professor are more likely to be engaged academically and succeed in their courses.

Faculty mentors should persuade students to exhibit quality behaviors, such as connect with other faculty, become a spokesperson pertaining to their disabilities, and attend class (Patrick & Wessel, 2013). Patrick and Wessel (2013) further noted that students believe having a mentoring relationship with a faculty member positively impacts their college transition and provide them with additional campus resources. Faculty members help undergraduate students to navigate the college environment and feel connected to the college or university. DeFreitas and Bravo (2012) maintained that positive faculty-student relationships help minority students to believe they belong within the college or university and can succeed academically. Nevertheless, faculty interactions

help to build undergraduate students' confidence in their ability to perform at the college level (DeFreitas & Bravo 2012).

Faculty support is needed among diverse student populations within colleges and universities. A research study that focused on faculty support and lesbian, gay, bisexual, transgender, and questioning (LGBTQ) students stated that LGBTQ students who interacted with faculty members felt supported in their class participation, academic and career choices, and their personal well-being (Linley et al., 2016). In this study, faculty members would attend LGBTQ events outside of the classroom to let students know they are allies for the LGBTQ community on campus (Linley et al., 2016). Faculty support inside and outside of the classroom can help students to understand that they are valuable to the professor and institution. Students who identify as LGBTQ need faculty members who are supportive of their lifestyle decisions. This can help LBGTQ students feel welcomed in the classroom and at the institution.

According to their research study DeAngelo, Mason, and Winters (2016), faculty members were intrinsically motivated to mentor undergraduate students as a personal and professional duty. DeAngelo et al. (2016) posited that STEM faculty members believed spending time with students in the lab and course seminars were openings for developing mentoring relationships and speaking with students about their personal experiences in wanting to become a STEM major. A humanities faculty member helped students to develop professionally by inviting students to lecture at the county art museum. Additionally, to help prepare students for graduate studies, faculty members in the social sciences and humanities department helped get students involved in grant-funded research projects and publishing research articles (DeAngelo et al., 2016). Faculty

members provide students with a variety of opportunities to promote educational and career growth. Through these opportunities, students can become more knowledgeable and experienced in their field of study.

Undergraduate students' retention rates remain a concern for colleges and universities across the nation. Kezar and Maxey (2014) asserted that faculty-student interactions help to reduce dropout rates among undergraduate students. Students who develop mentoring relationships with professors are more likely to learn and ask questions pertaining to the course. Moreover, faculty-student mentorships have numerous benefits for undergraduate students which include higher persistence and completion rates, improved grades, sense of worth, career and graduate school aspirations, and self-confidence (Kezar & Maxey, 2014).

Mentoring relationships can to help motivate individuals to succeed in a variety of areas such as networking, education, and careers. As it relates to higher education, minority students who build a relationship with faculty members are motivated to partake in educational activities, do their best, and achieve high academic expectations (Kezar & Maxey, 2014). Kezar and Maxey (2014) further stated that faculty mentorship motivates students to engage in their studies and help students to persist in their major.

Group Mentoring

Group mentorship can be identified by many names such as co-mentoring, mentoring communities, collaborative mentoring, and mentoring circles (Kroll, 2016). According to Kroll (2016) group mentoring can be defined as a group of three or more people who help others develop professionally and personally by providing support and motivation. However, Huizing (2012) asserted that group mentorship can be experienced

in a variety of ways such as one-to-many, many-to-one, many-to-many, and peer group mentorship. The mentor(s) who assist in the one-to-many and many-to-one mentoring relationships are more experienced individuals (Zachary, 2014). According to Zachary (2014), many-to many refers to a cohort of mentors and mentees that engage in a mentoring relationship. Nevertheless, Kroll (2016) claimed that peer group mentorship is designed for individuals to interact, share experiences, and mentor one another.

A small group setting helps students to develop a more personal relationship between their peers and mentor (Bundy et al., 2010). Small group mentoring relationships can allow for students to feel more comfortable about speaking on a variety of topics. When meeting with their groups, mentors discuss diversity, physical and emotional wellness, responsible choices, study skills and time management, and career choices and opportunities (Bundy et al., 2010). Bundy et al. (2010) noted that small group mentors are knowledgeable of resources provided on campus that can be provided to students who may experience difficulties transitioning to campus. Furthermore, undergraduate students who receive support services through group mentoring relationships are more likely keep a healthy, productive perspective and seek help when required throughout their academic tenure (Bundy et al., 2010).

Mentorship within group settings allow undergraduate students to share their experiences and learn from one another. According to a research study by Asgari and Carter (2016), undergraduate students who participated in a peer mentored psychology class performed significantly better academically than students who did not partake in the mentorship class. In this study Asgari and Carter (2016), a peer mentor met with the psychology class prior to scheduled exams to share personal experiences and provide

mentees with strategies on how to be successful in the course. Furthermore, the mentor provided students with additional resources such as tutoring and counseling services (Asgari & Carter 2016). Asgari and Carter (2016) reported that throughout the semester there was consistent improvement among mentored students. Additionally, students noted that their mentorship experience motivated them and helped build their confidence in their academic abilities.

Electronic Mentoring

Due to electronic mentorship being a fairly new phenomenon in the context of higher education, there are limited studies on the impact of e-mentorship on undergraduate students' performance behaviors. Electronic mentoring can be defined as the utilization of computer mediated communication to assist in a mentoring relationship (Risquez, & Sanchez-Garcia, 2012). Furthermore, e-mentoring can be referred to as telementoring, cybermentoring, virtual mentoring and online mentoring (Mullen, 2012; Rowland, 2012). Expounding upon the literature of e-mentoring, Neely, Cotton, and Neely (2017) asserted that e-mentoring is a mentoring relationship between the mentor and mentee through an online format.

As posited by Wilbanks (2014), due to the increased use of technology and social media, majority of mentors will use technology and social media to assist in their mentoring relationship. Consequently, e-mentoring is a convenient way to continue or establish a mentoring relationship. Mullen, S. (2012) added by stating that e-mentoring can transpire through social media, email, texting, and other digital communication formats. More specifically, in recent years that, LinkedIn, Facebook, Instagram, and Twitter have become popular social media platforms may assist with e-mentoring

relationships. Mentors and mentees can continue their mentoring relationship beyond graduation through the process of e-mentorship (Mullen, 2012).

On-line mentorship gives peer mentors the opportunity to provide additional support to undergraduate students (Bonin, 2013). Risquez and Sanchez-Garcia (2012) concluded that through the appropriate circumstances, e-mentorship can foster emotionally supported relationships. In addition, students who meet more often with their e-mentor receive greater career development and psychosocial support (De Janasz & Godshalk 2013). Similarly, Rowland (2012) further noted that e-mentoring promotes vocational, psychosocial and role modeling purposes through the utilization of technology. Undergraduate students face numerous stressors throughout college and thus, e-mentoring can provide students with an unlimited number of resources to help improve their emotional wellbeing while attending college.

An e-mentoring relationship should be a collaboration whereas the mentee and mentor work together. Williams, Sunderman, and Kim (2012) noted that the purpose of an e-mentor is not to give commands or directives to the mentee but rather provide possibilities and advise on potential consequences. E-mentoring allows higher education professionals to provide advice to mentees from any geographical location. University faculty, education leaders, and experienced teachers can mentor students in other countries through e-mentorship Mullen (2016). Neely et al., (2017) concluded that e-mentoring is a cost-effective and limit-less way for people to be educated and developed. However, one of the most notable limitations to e-mentoring is the lack of physical mentoring (Mullen, 2016).

Impact of Peer Mentoring on Students' Performance Behaviors

Recent studies found that peer mentorship positively impacted performance behaviors of undergraduate students with autism spectrum disorders (ASD) (Ashbaugh, Koegel, R. L., & Koegel, L. K. 2017; Rando, Huber, and Oswald, 2016). In their study Rando et al. (2016), 12 undergraduate students with ASD participated in the Raiders on the Autism Spectrum Excelling (RASE) program. Similarly, Ashbaugh et al., (2017) study focused on three undergraduate students with ASD who were not socially interactive with their peers. Rando et al. (2016) noted that students were paired with a transition coach. Transition coaches were hired and consisted of undergraduate and graduate students. Transition coaches were responsible for providing guidance and serving as valuable resources for questions or concerns. Additionally, transition coaches met with their assigned mentee for up to 10 hours per week. Furthermore, in their study Ashbaugh et al., (2017) students with ASD were paired with undergraduate peer mentors however, in this study peer mentors worked closely with a clinician and had taken a course on ASD or received training on symptoms and treatment of ASD. Ashbaugh et al., (2017) asserted that peer mentors were responsible for getting students socially engaged and participate in extracurricular activities on and off campus. Results from this study Rando et al., (2016) revealed that the GPA of undergraduate students who participated in the RASE program increased from 2.58 in the fall semester to 2.71 in the spring semester.

Rando et al. (2016) further suggested that 8 out of 11 or 72% of participants were retained during the same time which was higher than the overall university's first year retention rate at 61.5%. Furthermore, of the eight participants, seven or 87.5% were retained into their third year. Likewise, results in this study Ashbaugh et al., (2017)

reported that each students' GPA increased after the mentorship intervention. In the present study, the researcher seeks to determine how undergraduate students who have received peer mentorship view their performance behaviors while attending college.

Walker and Verklan (2016) and Fianco (2012) agreed that peer mentoring relationships positively impact undergraduate students GPA. Walker and Verklan (2016) noted that undergraduate nursing students who establish a peer mentoring relationship earn significantly higher GPAs than students who do not have a peer mentor. However, Fianco's (2012) study revealed that the gender of the peer mentor plays a role in the influence of students' GPA. Results in this study show that male but not female course GPA is positively and significantly impacted by male peer academic quality however, female peer academic quality has no statistically significant effect on male or female GPA.

Peer mentoring relationships are often used as interventions strategy to help undergraduate students persist in college. In their research study that focused on black males' persistence in college, Brooms and Davis (2017) posited that peer-to-peer mentorship among black male students is critical to black male undergraduate students persisting in college. Similarly, Perez (2017) noted that Latino undergraduate students lean on Latino peer mentors for social support and familial capital which help motivate students toward degree completion. Results from Perez's (2017) study revealed that peer mentorship is critical in shaping persistence and degree completion among Latino undergraduate students. Furthermore, Kring, (2017) added to the research by concluding that peer mentorship is valuable in helping undergraduate students persist toward graduation.

Cerezo and Chang (2013) maintained that a relationship with ethnic minority peers is a significant, positive predictor of undergraduate Latina/o students' GPA who attend predominantly white institutions. In comparison to their study Cerezo and Chang (2013), Graham and McClain (2019) concluded that peer mentorship does not significantly impact black college students' GPA.

Peer mentoring can be a vitally important strategy for retention and enrichment of undergraduate students (Zevallos & Washburn, 2014). According to a research study by Lisberg and Woods (2018), peer mentored students were 16% more likely to be retained than students who were not paired with a peer mentor. Zevallos and Washburn (2014) further suggested that peer mentoring relationships can be beneficial to both the mentor and mentee. Peer mentors are motivators who assist in undergraduate students' development while also, helping students to navigate the college environment. Additionally, mentors can build professional skills and gain confidence by providing academic skills to mentees (Zevallos & Washburn, 2014).

Moreover, a study that focused on social and academic benefits of peer mentors in retention programs suggested that mentorship programs that implement peer mentors who are trained to exhibit aspects of advocacy, role modeling, and act as human bridges for the program participants can improve retention efforts (Kiyama & Luca 2014). Conversely, according to a study that focused on the impact of peer mentorship on undergraduate students' first year in a pharmacy program, Etzel, Algifari, Shields, Wang, and Bileck (2018) asserted that peer mentorship does not significantly impact retention to the program or institution.

In a research study that focused on increasing STEM success of undergraduate students, Zaniewski and Reinholz (2016) stated that students who participate in the peer mentoring program are more likely to be retained. However, peer mentorship did not help to increase persistence among undergraduate students. Prior to the mentoring program one-to-two-year major persistence rate was 59%. Once the mentoring program was implemented, persistence rates of undergraduate students who participated in the program dropped to 33% (Zaniewski & Reinholz, 2016).

According to a study by Giust and Valle-Riestra (2017), peer mentors do in fact improve academic results among undergraduate students. In their study Giust and Valle-Riestra (2017), students served as academic mentors and peer coaches who provide academic and social support to students with intellectual disabilities. Academic mentors' roles consisted of (1) maintaining a productive academic environment, (2) assisting students with assigned course work, (3) supporting suitable classroom etiquette, (4) promoting independence and taking responsibility, and (5) aiding students in managing their time (p.148). Mentors found that working one on one with their mentee and utilizing a variety of study strategies resulted in improved academic achievement among undergraduate students. While it may be true that peer mentors can help to improve academic success of undergraduate students, in their study Blankenship et al. (2020), results revealed that peer mentorship does not positively impact students' GPA or retention.

A recent study confirmed that peer mentorship does not positively impact undergraduate students' GPA or retention in college (Baker, 2013). According to Baker (2013), in terms of GPA, Co-ethnic peer support does not significantly affect academic

performance of black or Latino undergraduate students. Results from this study showed that peer support has a significant negative effect on black female's sophomore year GPA. Therefore, Baker (2013) asserted that black females who study fewer times with other students earn higher GPAs.

Peer mentorship allows students to engage with upper-class students and learn about the college campus. Undergraduate students who are peer mentored can learn from the lived experiences of their mentor, which can help students to avoid unnecessary situations. Peer mentors are aware of what under-class students maybe experiencing as they navigate college, and therefore mentors will be able to provide students with the necessary support and motivation to be successful in college.

Impact of Faculty Mentorship on Students' Performance Behaviors

Haeger and Fresquez (2016) and Salto, Riggs, De Leon, Casiano, and De Leon, M. (2014) claimed that faculty mentorship does impact underrepresented undergraduate STEM majors' performance behaviors. However, in their study Salto et al., (2014) researchers focused on underrepresented minority high school and undergraduate students in STEM. Haeger and Fresquez (2016) focused on undergraduate students who already experienced a faculty mentoring relationship while in their study Salto et al. (2014), faculty mentorship was used as an intervention strategy to increase students' performance behaviors. Moreover, Salto et al. (2014) study stated that underrepresented minority undergraduate students who participated in the Undergraduate Training Program (UTP) participated in an eight-week research-apprenticeship. Additionally, UTP participants and their assigned mentor defined goals and experiments, decided on individual projects, and created a realistic time for completion. Unlike Salto et al. (2014),

Haeger and Fresquez (2016) used secondary data more specifically, institutional data (GPA and graduation rates) was used to establish matched data sets of mentored students and a control group. Haeger and Fresquez (2016) further suggested that a survey was used to collect data based on student outcomes and mentorship experience. Results from their study, Haeger and Fresquez, (2016), revealed that 39% of the variance in GPAs was attributed to faculty mentored undergraduate research. Furthermore, students who engaged in mentored undergraduate research received remarkably higher overall GPAs by their senior year compared to students who did not engage in mentored undergraduate research (Haeger & Fresquez, 2016). Regarding graduation rate, there was no statistically significant difference between mentored students and non-mentored students while this may be true according to Haeger & Fresquez (2016), Salto et al., (2014) results revealed that graduation rates did increase among undergraduate STEM students who established mentoring relationships with faculty members. Ninety percent of UTP participants graduated with a STEM degree (Salto et al., 2014). In the present study, the researcher seeks to determine how undergraduate students who have received faculty mentorship view their performance behaviors while attending college.

Kendricks, Nedunuri, and Arment (2013) posited that undergraduate students who developed a mentoring relationship with a faculty member were retained in their program and earned higher GPAs. In this study, undergraduate students who participated in the honors program and were STEM majors at Central State University (CSU) were paired with a faculty mentor based on their major. Students were required to meet with his or her mentor monthly. Results from this study found that undergraduate students were retained at 100% in their STEM program and at CSU. Additionally, from Spring 2009 to

Spring 2010 undergraduate students' GPA increased by 5% (Kendricks et al., 2013). Pairing undergraduate students with faculty mentors who are in their field of study allows for a genuine connection. Mentors and mentees can relate based on similar interests, which provides a foundation for a successful mentoring relationship.

In a study that looked at the influence of on-campus supports for African American and Latino College students, Baker (2013) found that there is a positive correlation between faculty support and undergraduate students' GPA, except for black males. Additionally, faculty support had a statistically significant positive effect on Latina students' GPA. Results from this study revealed that African American and Latino students who had support from professors who were of the same race had improved academic performance (Baker, 2013).

Faculty mentorships provide students with academic support to be successful in their courses. Junge, Quinones, Teodorescu, and Marsteller (2010) and Wilson, Iyengar, Pang, Warner, and Luces (2012) conducted research studies that found faculty mentored research significantly increases undergraduate students' GPA. Likewise, Tovar's (2015) study, revealed that a faculty mentored relationship outside of the classroom had significant impact on Latino students GPA. This study revealed that the more students met with their faculty mentor, the higher the GPA the mentee earned. With regards to persistence, it was noted that faculty mentorship did not impact undergraduate students' intent to persist (Tovar, 2015).

Additionally, Lisberg and Woods (2018) asserted that faculty mentorship positively increased undergraduate students' retention rates. Similarly, Proctor, Nasir, Wilson, Li, and Castrillon (2018) concluded that eight African American undergraduate

students who majored in psychology determined that supportive faculty relationships were an effective retention strategy for the psychology program.

In their research study, Hernandez et al., (2017) posited that through scientific identity, faculty mentors positively impact undergraduate females' intent to persist. Moreover, black male undergraduate students view having a black faculty mentor as crucial to their persistence in college (Brooms & Davis, 2017). Brooms and Davis (2017) further suggested that black faculty mentors can be momentous in retaining black male students and positively affecting their college satisfaction. However, in a research study that examined relevant influences on the persistence of African American college students, Thomas, Wolters, Horn, and Kennedy (2014) concluded that faculty mentorship is not a statistically significant predictor of persistence among black college students.

Law, Hales, and Busenbark, (2020) and Price and Tovar, (2014) maintained that faculty mentorship positively impacts student success and therefore, improve graduation rates among undergraduate students. Likewise, in a study that examined perspectives on student-faculty relationships, Guzzardo et al. (2020) identified four themes for faculty practice: 1) Create pedagogical space, 2) Be inclusive and aware, 3) be engaged and engage students, and 4) Do more than teaching (p. 46). Students believed theses four themes would help student-faculty relationships to be more supportive and responsive which could ultimately result in greater academic success among students.

Faculty mentorship has proven to positively impact undergraduate students' performance behaviors. Student-faculty mentoring relationships help undergraduate students to feel like they can be successful in academic settings. More specifically, students who are mentored by faculty members who look like them will have someone

they can relate to and develop a genuine relationship. Undergraduate students need support from professors who are willing to contribute extra time to help ensure students reach their academic goals.

Impact of Group Mentoring on Students' Performance Behaviors

Schneider, Bickel, and Morrison-Shetlar (2015) and Tampke and Durodoye (2013) agreed that group mentorship positively impacts undergraduate students' GPA and retention. According to Schneider, Bickel, and Morrison-Shetlar (2015) undergraduate students who participated in the Learning Environment and Academic Research (LEARN) community were first year students who lived in the same residence hall, enrolled in the same course, were paired with a peer mentor, and engaged in a 12-week peer mentored research apprenticeship. Similarly, in their study Tampke and Durodove (2013), the researchers used the first-year seminar (FYS) and FYS/ Learning Community (LC) courses as an intervention strategy to enhance student success in college. However, in this study the researchers focused on undecided students. The researchers also incorporated peer mentors into each of the FYS and FYS/LC courses. The findings from this study confirmed that undecided students who participated in the FYS intervention exhibited an increased GPA of .38 and FYS/LC had a GPA increase of .34 as compared to the control group. Furthermore, FYS/LC slightly increased retention performance among undeclared students. Likewise, Schneider, Bickel, and Morrison-Shetlar (2015) proposed that undergraduate students who participated in the LEARN Community received higher GPAs and retention rates.

Previous research has supported the notion that group mentorship and undergraduate students' performance behaviors are positively correlated. A research

study that examined strategies to recruit and retain first generation and underrepresented minority (URM) students in physical science and mathematics programs discovered that students who participated in the Physical Sciences and Mathematics Scholarship program had a 100% retention rate while 100% of students either graduated or persisted in their major. Moreover, approximately 80% of students noted that faculty mentorship helped them to persist toward graduation and overcome barriers inside and outside of the classroom (Chang, Buonora, Stevens, & Kwon, 2016).

Shojai, Davis, and Root (2014) conducted a research study that found group mentorship positively impacts undergraduate students GPA. During this study, all undergraduate students who had GPAs lower than a 2.0 and business majors whose GPA was lower than a 2.5 were placed on academic probation. Students who were on probation were offered the opportunity to participate in the peer-mentoring program. The mentors in this program consisted of upper-class undergraduate students whose responsibilities included providing advice, guidance, sponsorship, advocacy, training, and instructions to undergraduate students. Additionally, while participating in this program, mentor and mentees met for approximately 14 group sessions throughout the semester. According to research, group mentoring is a significant factor in increasing undergraduate students GPA who completed the programs. Results from this study revealed that undergraduate students' GPAs increased by .37 on a 4.0 scale (Shojai et al., 2014).

According to Ricks, Richardson, Stern, Taylor, and Taylor, R. A. (2014) and Toven-Lindsey, Levis-Fitzgerald, Barber, and Hasson, (2015), STEM majors who participated in group mentorship received improved academic performance. Toven-

Lindsey et al. (2015) focused on increasing persistence in undergraduate science majors. During this study, undergraduate science majors who participated in the two-year, cohort-based Program for Excellence in Education and Research in the Sciences (PEERS) attended academic and career seminars, holistic academic counseling, research seminars, and collaborative educational workshops. PEERS helped to encourage students, prepare students academically, and provided positive peer-group motivation (Toven-Lindsey et al., 2015). Comparably, Ricks et al. (2014) conducted a research study that focused on promoting retention and graduation of at-risk engineering students. During this study, a cohort of undergraduate engineering students participated in the University of Alabama (UA STEM) program. While participating in the program, students were mentored by faculty and peers, and received academic support. However, in their study Ricks et al. (2014) researchers referred to retention as students who persisted in their major. Unlike Toven-Lindsey et al. (2015) study, students who participate in this study Ricks et al. (2014) received financial support and participated in community building activities.

Toven-Lindsey et al. (2015) discovered that students who participated in the PEERS program during the fall semester earned GPAs of 2.89 in Chemistry Course 14A and 2.80 in Chemistry Course 20A as compared to the non-PEERS group who earned a 2.26 and 1.92. Moreover, nearly 90% of PEERS students were retained in science majors at end of year two compared to 70% for the non-PEERS group. PEERS students had a persistence rate of 90.1% compared to 68.8% by the non-PEERS group. Similarly, Ricks et al. (2014) maintained that freshmen UA STEM participants had higher retention rates in year two, three, and four as compared to non-UA STEM participants. Additionally, UA STEM participants had a 50% graduation rate compared to non-UA STEM

participants at 39%. In the present study, the researcher seeks to determine how undergraduate students who have received group mentorship view their performance behaviors while attending college.

According to a research study that explored triangulated mentorship, Kaul, Ferguson, Yan, and Yanik, (2019) reported that triangulated mentorship does impact undergraduate students GPA and retention. A visual diagram below shows the methodology of triangulated mentorship which consist of peer mentoring, vertically integrated mentoring, and faculty mentoring.

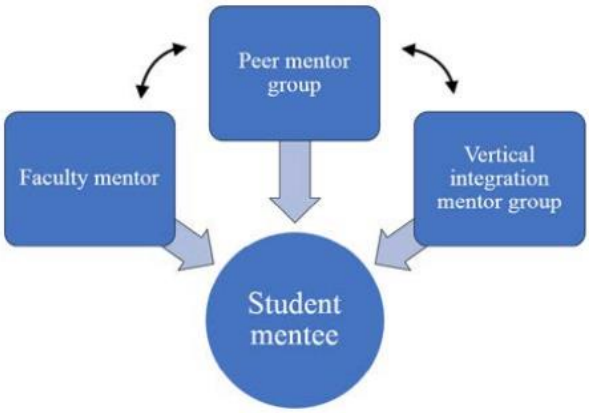

Figure 1. Mentorship Methodology Triangulation Kaul et al. (2019)

In this study, peer to peer mentorship refers to students who are on the same academic level motivating and supporting each other. Additionally, vertically integrated mentorship is referring to junior and senior level students who serve as role models to freshmen and sophomore students. According to Kaul et al. (2019) a group of 15 to 30 students met every other week for one hour throughout the semester. During these sessions, faculty members would discuss a topic that would help students to be successful

in college. First, students were allowed 15 minutes to have a discussion among their peers. Secondly, students were placed into smaller groups where they could have a discussion with a vertically integrated mentor. Third, 15 minutes was allowed for students to speak further with a vertically integrated or faculty mentor. Lastly, 15 minutes were used to discuss academic difficulties and common themes that may have emerged from group discussion (Kaul et al., 2019). Results from this study showed that although 25% of students who participate in program switched majors, 100% of the students were retained in the engineering and engineering technology programs. In addition to students being retained, with regards to GPA, students who participated in the program performed slightly better than students who did not participate in the program.

In their study Wilson et al. (2012), undergraduate students were provided with mentorship from faculty, staff, and peers. Findings revealed that the many-to-one group mentorship approach provided students with resources and helped them to become familiar with the university which is directly related to undergraduate students navigating toward graduation (Wilson et al., 2012).

Group mentorship strategies help to provide students with academic, social, and emotional support. Undergraduate students who participate in group mentorship can communicate with students who are close in age and learn from each other. Group settings offer a more intimate setting for students to feel relaxed about speaking on numerous topics. Group mentoring provides students with support in multiple areas within a college environment. More specifically, many-to-one and many-to-many group mentorship have the ability provide students with assistance in variety of areas within the college campus community.

Electronic Mentoring on Students' Performance Behaviors

In a research study that look at e-mentoring and students attending a community college Gregg et al. (2016) confirm that e-mentoring and virtual relationships help to motivate students to persist and become successful in academic and career environments. In this study, mentors and mentees met virtually at a minimum of 10 times per semester. Students who participated in e-mentoring were involved in online learning and training practices, used social media platforms to promote networks of support, and accessed STEM resources virtually (Gregg et al., 2016).

Additionally, in their study that examined the impact of e-mentoring on students with disabilities, Todd, Moon, and Langston, (2016) found that persistence increased among disabled STEM students who participated in the GSAA BreakThru e-mentoring program.

Mollica and Mitchell (2013) in their study used online peer mentoring as an intervention strategy for undergraduate nursing students. The purpose of the mentoring intervention strategy was to decrease anxiety and build confidence among nursing students (Mollica & Mitchell, 2013). Outcomes for the online peer mentoring program included student satisfaction, acceptability, and retention rates. Preliminary results of this study revealed that an online mentoring program can provide students with the necessary support for learning and to be successful in the nursing program (Mollica & Mitchell, 2013).

According to a study that examined organizational e-mentoring and learning Haran and Jeyaraj (2019) found that e-mentoring can help mentees learn effectively, which has the possibility to improve commitment to an organization. Thus, e-mentoring

within higher education organizations can lead to undergraduate students learning effectively and being committed to a university, which can help increase GPA, retention, persistence, and graduation rates.

Electronic mentorship is a convenient alternative to in person mentorship, which can provide undergraduate students with support throughout their educational journey. Mentors and mentees who utilize the electronic mentorship approach will not only be able to establish a relationship, but they will also be able to continue their mentoring relationship wherever they may be located. Through the use of electronic mentorship, mentors have the ability to motivate students and provide them with advice on academics and career opportunities, which can greatly improve students' overall college satisfaction.

Identifying Effective Strategies and Challenges for Mentoring Relationships in Higher Education

According to Crisp et al. (2017) mentorship within of the arena of higher education is continuously related to success. More specifically, research revealed that mentorship strategies helped undergraduate students to increase their GPA, retention, graduation rates, and persistence in college. Additionally, Lund, Liang, Konowitz, White, and Mousseau (2019) posits that colleges and universities should promote mentorship and give students opportunities to establish mentoring relationships.

Crisp et. al. (2017) asserted that an important piece to mentoring relationships being rewarding is the training of mentors. Mentors who are trained are more likely to exhibit competence and have a quality relationship (Crisp et al., 2017). Crisp et al. (2017) further stated that when matching mentors and mentees it should not be solely based on

the student's subject area. Age, race, gender, and experiences matter when pairing mentees and mentors (Crisp et al., 2017).

The lack of a universal term for mentoring may cause individuals to misunderstand the purpose of developing a mentoring relationship. Brondyk and Searby (2013) noted that there is a need for the establishment of an operational definition of best practices in terms of mentoring within institutions of education. This will allow for successful mentoring practices to be empirically supported and recognized by professionals in the field of education (Brondyk & Searby 2013). Brondyk and Searby (2013) asserted that the following criteria should be followed to qualify as best practice:

1. Effective in practice; effective practice refers to a practice that is attainable, accessible, and affordable. Only practices that are well known and effectively being used by education professionals should be considered.
2. Empirically proven; empirically supported research such as peer-reviewed journals, scholarly books, or dissertation research must be the foundation of a practice. This will help to ensure that practices are not based completely on experiences of education professionals and;
3. Lastly, achieve the stated purpose; a practice must accomplish its intended goals to be viewed as a best practice (p. 198).

Figure 2. Best Practices (Brondyk & Searby, 2013).

Although there are many benefits of mentoring relationships within higher education, mentoring relationships also present some challenges. Sanfey, Hollands, and Gantt (2013) maintained that challenges of mentoring relationships may arise from race, gender, age and generational differences. On the other hand, according to DeAngelo et al. (2016) two major factors that prevent faculty members from establishing a successful mentoring relationship with undergraduate students are a large class size and heavy class load. Ultimately, these factors prevent faculty members from having the necessary time to properly mentor undergraduate students (DeAngelo et al., 2016).

Mentees may encounter a bad mentor which can result in an unsuccessful mentoring relationship (Sanfey, et al., 2013). Sanfey et al. (2013) referred to a bad mentor as someone who "does not realize the potential of a mentee, fails to establish personal and professional boundaries, dismisses mentee's beliefs, or takes recognition for

the mentee's work" (p. 717). Additionally, if a mentee encounters a bad mentor, he or she will have to seek advice on how to effectively end the relationship (Sanfey, et al., 2013). Lastly, Sanfey et al. (2013) posited that mentees may experience problems such as clinical depression, personality disorders, or substance abuse that is outside of the mentor's scope of reach. Therefore, mentors need to be able to recognize when they are not able to assist mentees and provide them with the correct resources to help resolve their problem (Sanfey et al., 2013).

Other researchers have found that cost of providing mentorship to undergraduate students is a major barrier. Unfortunately, there are higher education institutions that cannot afford to establish a mentoring program for undergraduate students. Furthermore, educational institutions may not be able to provide administrators, faculty, staff, or students the necessary compensation to provide mentoring services to undergraduate students.

As claimed by Dziczkowski, (2013), time constraints can be a challenge that hinders a mentor and mentee from establishing a quality mentoring relationship. Due to a limited amount of free time, professionals are not able to set time aside to properly mentor an individual. Additionally, incompatible pairing may arise as another challenge within a mentoring relationship (Dziczkowski, 2013). For some mentoring relationships, personality differences, philosophical differences, and differences in approach can pose some conflict between the mentor and mentee (Dziczkowski, 2013). Finally, Dziczkowski (2013) asserted that the lack of or improper training of mentors can result in a failed mentoring relationship.

CHAPTER 3

DESIGN OF THE STUDY

To effectively improve undergraduate students' performance behaviors, in this study I sought to understand the predictive power of types mentoring relationships to expound on existing literature and add new strategies to improve GPA, retention, graduation and persistence rates. The purpose of this study was to examine the predictability of types of mentoring relationships on the perceived performance behaviors of college undergraduate students. Specifically, this study focused on the predictable relationship between types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, online mentorship, and group mentorship) on the perceived academic success, retention status, graduation status, and persistence status of undergraduate students.

This chapter is comprised of eleven key sections: 1) type of research design; 2) population and research setting; 3) sampling procedure; 4) instrumentation; 5) validity of the instrument; 6) reliability of the instrument; 7) data collection procedures; 8) independent and dependent variables; 8) Pilot Study; 9) null hypotheses; 10) statistical analysis; 11) Evaluation of statistical assumption.

Type of Research Design

A correlational research design (see Figure 3) was employed in this investigation. This type of quantitative methodology allowed me the opportunity to collect data to assess the degree of relationship that exist between two or more variables (Gay, Mills, & Airasion, 2012). According to Gay, Mills, and Airasion, (2012), a correlational study was utilized to measure something that has already occurred. The utilization of a correlational

research design will allow the researcher to predict scores on one variable from study participants' scores on other variables (Mertler, & Vannatta 2016). Additionally, one of the most common strengths of the correlational research design is the simplicity of the design (Gay, Mills, & Airasion, 2012). A correlational design allowed me to investigate the predictability of types of mentoring relationships on the perceived performance behaviors of undergraduate students.

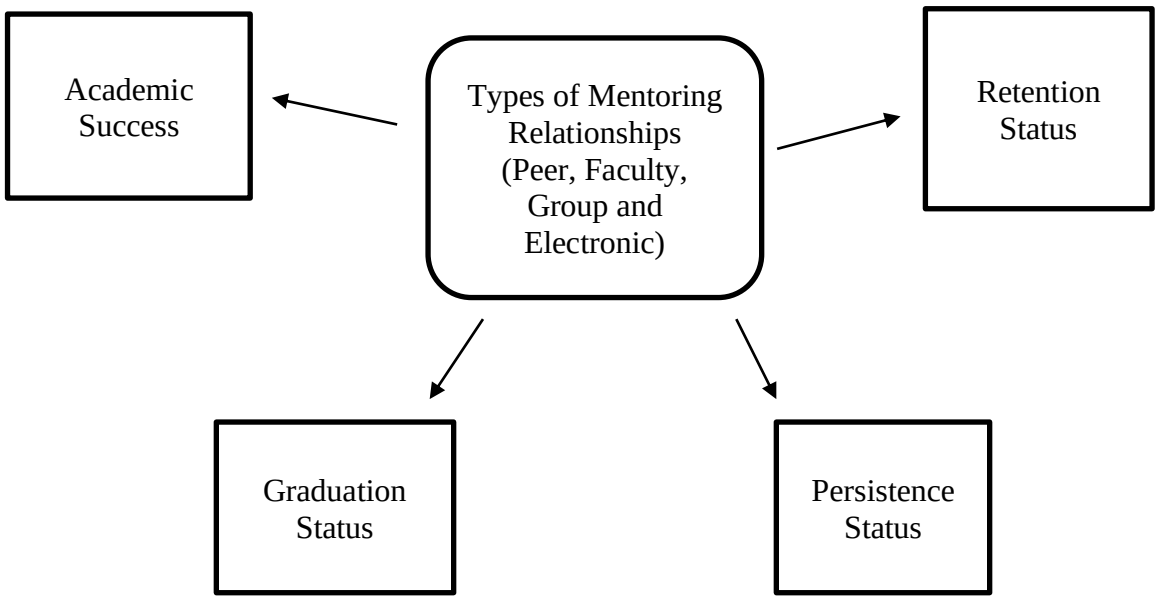

Figure 3. Correlational Predictable Design

Population and Research Setting

The participants of this study involved current undergraduate students who have experienced a mentoring relationship at one of two HBCUs. The participants in this study consisted of young to middle aged adults who experienced a faculty mentor, peer mentor,

group mentoring, or e-mentoring relationship. The research setting consisted of two public HBCUs, located in the Midwestern and Southcentral region of the United States.

Additionally, Urban University A is one of the most comprehensive urban universities in the nation and it is in the Southcentral region of the United States. This university has a population of approximately 6,000 undergraduate students and is a considered a commuter campus, which included traditional and non-traditional students. Rural University B is an 1890 Land Grant Institution, and it is in the Midwestern region of the United States. This university has a population of approximately 2,000 undergraduate students and is considered a traditional campus where student live on campus.

Sampling Procedure

A purposive sample of the population was necessary for this study. Purposive sampling is a non-probability sampling procedure. According to Kerlinger and Lee (2012) by utilizing a purposive sampling technique in this study, I had the ability to select individuals based on a variety of criteria that is believed to be representative of a specific population. The sample consisted of undergraduate students who are enrolled at two universities located in two regions of the United States (Southcentral and Midwest).

For the purpose of this study, the sample was selected based on the following criteria: 1) the participant must be currently enrolled at a college or university, 2) the participant must be an undergraduate student, 3) enrolled in one of the targeted universities during the spring semester of 2020-2021, and 4) the participant must have experienced a mentoring relationship (peer, faculty, group, electronic).

Instrumentation

Undergraduate's Perceptions of Performance Behaviors Survey, a self-devised instrument was used to collect the data. The instrument contained 26 items covering two major areas. Section I contains demographic items and items pertaining to type of mentorship. Section II, which is entitled, Student's Perception, consists of 20 items covering four areas. Area one which is entitled, Student's Perception Regarding Academic Success contains 7 items. Area two which is entitled, Student's Perception Regarding Retention Status consists of 7 items. The third area which is entitled, Student's Perception Regarding Persistence Status contains 7 items. Likewise, the fourth area which is entitled, Student's Perception Regarding Graduation Status consists of 5 items.

Furthermore, all items in Section II of the instrument are in a Likert format. The students were required to rate each item on a five-point Likert scale. For analysis purposes, the scale scored (1) Strongly Agree (2) Agree (3) Neutral (4) Disagree (5) Strongly Disagree. The responses were tallied to determine the perceived performance behaviors of college undergraduate students.

Validity of the Instrument

Validity refers to the degree to which an instrument measures what it is supposed to measure (Kerlinger and Lee, 2012). More specifically, content validity refers to the degree to which the test is fully representative of what it is supposed to measure. In this study, the researcher utilized content validity to measure how well the content of the survey covers the areas that it aims to measure.

To establish content validity on the Undergraduate's Perceptions of Performance Behaviors Survey, I administered the instrument to several experts in the field of higher

education. The experts were asked to assess the content (items) of the instrument by using a scale of 0 to 2 (zero means that the item is not measuring the intended area, one means that it is not clear, and two means that the item is measuring the intended area). Once the experts agreed that the instrument measured the intended areas, the instrument was field-tested.

Reliability of the Instrument

To establish reliability, I employed the internal consistency procedure. This type of reliability assesses "how all items on a single instrument correlate with all other items and the total instrument. To compute the internal consistency estimate for the instrument, the Alpha reliability coefficient was used.

The following internal consistency reliability coefficients were calculated from the data for each dimension (subscale) of the investigative instrument as well as the total instrument:

Academic: .948 Retention: .953

Persistence: .962 Graduation: .955

Total: .985

Data Collection Procedures

A letter (See Appendix A) and a copy of the questionnaire (See Appendix C) were sent to the targeted institutions of higher learning requesting participation in the study. The letter provided the importance of and the need for the study. Also, I indicated to the institutions that a copy of the results would be available.

The two-section closed ended questionnaire was disseminated via Google Forms website. Even though there are no specific requirements for administering the

questionnaire, all participants were informed by me about the importance of responding to each item on the questionnaire. The problem of non-response was kept to a minimum.

The complete questionnaire was tallied using Google Forms. Once this phase of the research was completed, the questionnaire was downloaded by me. I coded the data from the questionnaires. The codes were entered into a computerized analysis system. For analysis purposes, applications of the Statistical Package for the Social Science (SPSS) were used.

Identification of the Independent and Dependent Variables

Based on the review of the literature, I selected the appropriate variables for this study. In this study, the independent variables were peer mentorship, faculty mentorship, group mentorship, and e-mentorship. It was assumed that the independent variables would have predictive power on the dependent variable perceived performance behaviors (GPA, retention, persistence, and graduation rates) among undergraduate students.

Pilot Study

A pilot study was conducted to determine an estimate of reliability of the Undergraduate's Perceptions of Performance Behaviors Survey. Twenty (20) undergraduate students from a similar university participated in the pilot study. The pilot study was examined for suggestions and criticism. Once this was done, the instrument was administered to the participants selected to participate in the study.

Null Hypotheses

The following null hypotheses were formulated and tested in this investigation:

HO_1: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, staff

mentorship, electronic mentorship, and group mentorship) and the perceived academic success of undergraduate students.

HO_2: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, electronic mentorship, and group mentorship) and the perceived retention status of undergraduate students.

HO_3: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, electronic mentorship, and group mentorship) and the perceived graduation status of undergraduate students.

HO_4: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, staff mentorship, electronic mentorship, and group mentorship) and the perceived persistence status of undergraduate students.

Statistical Analysis

The data analysis employed in this study was simultaneous multiple regression. The simultaneous multiple regression statistical design determined the relationship or association of the variables. The identified population was assessed on their perceived academic success, retention and graduation status, and persistence. The standardized regression coefficients of the multiple regression were an indicator of how well the given variable can be predicted using a linear function of a set of the other variables to establish the relationship between the variables.

The simultaneous multiple regression analysis allowed me the opportunity to examine the predictability between multiple predictor variables and a single criterion variable (Warner, 2012). More specifically, this statistical model permitted me to examine the predictive power of each variable in the study while controlling for all other predictor variables (Warner, 2012).

Moreover, several advantages associated with the multiple regression model are as follows: 1) it identifies variables that are highly related to determining statistical and theoretical relations, 2) it provides unstandardized and standardized estimates of how variables are related, 3) it provides goodness-of-fit indices to indicate how well the empirical data are consistent with the hypothesized model, and 4) it creates the mathematical equations to explain the statistical power of predictor variables on the criterion variables (Warner, 2012). Therefore, a multiple regression statistical design allowed me to test the predictability of types of mentoring relationships on the perceived performance behaviors of undergraduate students.

Evaluation of Statistical Assumptions

Osborne and Waters (2002) claimed that the following assumptions are associated with standard multiple regression.

1. There must be a linear relationship between the independent and dependent variables. This assumption was tested by examining the residual plots.
2. The criterion variable utilized in the regression model should establish a bell-shaped curve. This assumption was tested by utilizing the Shapiro-Wilk test.

3. The criterion variable should have equal variance of errors across all levels of the independent variables. This assumption was tested by utilizing the Box M Test.
4. The independent variables should be measured without error. This assumption was tested by examining the box plots.
5. Two or more independent variables should not be highly correlated with one another. To test this assumption, the tolerance procedure was utilized (p. 1-5).

CHAPTER 4

DATA ANALYSIS

The purpose of this study was to examine the predictability of types of mentoring relationships on the perceived academic success, retention status, graduation status and persistence status of undergraduate students in the United States. Specifically, this study focused on the predictable relationship between types of mentoring relationships such as peer mentorship, faculty mentorship, e-mentorship, and group mentorship on the perceived academic success, retention status, graduation status, and persistence status of undergraduate students. Answers to the following questions were sought:

1. Do types of mentoring relationships (peer mentoring, faculty mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived academic success of undergraduate students?
2. Do types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived retention status of undergraduate students?
3. Do types of mentoring relationships (peer relationship, faculty mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived graduation status of undergraduate students?
4. Do types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) have any predictive power regarding the perceived persistence status of undergraduate students?

Frequency Distribution and Analysis of Participants in the Study

The sample population for this study consisted of two hundred and sixty (260) undergraduate students from two HBCUs. The analysis section of this chapter was divided into four main areas. The first area consisted of the demographic characteristics of the undergraduate students utilizing frequently distributions. The second area addressed the descriptive statistics employing the means and standard deviations regarding the independent and dependent variables. The third area dealt with the intercorrelation results pertaining to the independent and dependent variables. The fourth and final area entertained the examination of the four null hypotheses formulated in the study. The standard multiple regression procedure, multiple correlation procedure and the point biserial correlation techniques were used to analyze the hypotheses generated in this study. All hypotheses were tested at the .05 level of significance of better.

There were 260 undergraduate college students who participated in this investigation. These students were demographically described by their gender, age, ethnicity, and classification.

Gender. There were 65 or 25% of the undergraduate students who identified themselves as males. By contrasts, there were 195 or 75% of them who indicated that they were females. See Table 1 for these results.

Table 1

Frequency Distribution of Participation by Gender

Gender	Number	Percent
Male	65	25.0
Female	195	75.0
Total	260	100.0

Age. The variable age was categorized into four groups. There were 30 or 11.5% of the undergraduate students who reported their age as 18 or below and 97 or 37.3% of them indicated their age was between 19 or 20. On the other hand, 60 or 23.1% of the undergraduate students revealed their age was between 21 and 22 and 73 or 28.1% of them expressed their age was 23 and above. See Table 2 for these findings.

Table 2

Frequency Distribution of Participation by Age

Age	Number	Percent
18 and Below	030	011.5
19 and 20	097	037.3
21 and 22	060	023.1
23 and Above	073	028.1
Total	260	100.0

Ethnicity. The variable ethnicity was recategorized into eight (8) subgroups. There were 21 or 8.1% of the undergraduate students who identified their ethnic status as white and 24 or 9.2% of them indicated their ethnic background as Hispanic. Likewise, 187 or 71.9% of the undergraduate students reported their ethnic identity as African American (black) and 3 or 1.2% revealed their ethnic background as middle Eastern. In addition, 4 or 1.5% of the undergraduate students acknowledge their ethnicity as Asian and 15 or 5.8% of them expressed their ethnic status as multiracial. Finally, 5 or 1.9% of the undergraduate students indicated their ethnic identity as "other" and only one undergraduate student said his/her ethnicity was South Asian. See Table 3 for these analyses.

Table 3

Frequency Distribution of Participation by Ethnicity

Ethnicity	Number	Percent
White	021	008.1
Hispanic	024	009.2
Black	187	071.9
South Asian	001	001.2
Middle Eastern	003	001.2
Asian	004	001.5
Multiracial	015	005.8
Other	005	001.9
Total	260	100.0

Classification. There were 64 or 24.6% of the undergraduate students who identified they were freshman and 57 or 22% of them revealed they were sophomores. In addition, 67 or 25.8% of the undergraduate students reported they were juniors and 72 or 27.7% of them expressed they were seniors. See Table 4 or these results.

Table 4

Frequency Distribution of Participants by Classification

Classification	Number	Percent
Freshman	064	024.6
Sophomore	057	022.0
Juniors	067	025.8
Seniors	072	027.7
Total	260	100.0

Mean and Standard Deviation Results

The mean and standard deviation for the independent and dependent variables utilized in the standard multiple regression model were calculated for this study. On average, undergraduate students had a perceived academic success score of 27.02 (SD=7.79). and a perceived retention status score of 26.36 (SD=8.33).

Additionally, on average, undergraduate students had a perceived graduation status scores up 19.47 (SD = 6.23) and a perceived persistence score of 26.7 (SD = 8.44). In addition, all four types of mentoring relationship (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) were dummy coded for this study. Each variable was coded “1” for yes and “0” for no indicating an undergraduate student exposed to a specific mentoring relationship.

Table 5

Means and Standard Deviation of the Variables in the Prediction Model

Variables	Mean	Standard Deviations
Peer Mentoring	00.38	0.49
Faculty Mentoring	00.33	0.47
E-Mentoring	00.26	0.74
Group Mentoring	00.06	0.23
Academic	27.02	7.79
Retention	26.36	8.33
Graduation	19.47	6.23
Persistence	26.77	8.44

Note. Academic=Academic Mentoring; Retention=Retention Mentoring; Graduation=Graduation Mentoring; Persistence=Persistence Mentoring

Intercorrelations Results Among Independent and Dependent Variables

Intercorrelations (See Table 6) were calculated among the five independent variables and the dependent variables perceived academic success, graduation status, retention status and persistent status. The point biserial correlation procedure was employed to determine the linear relationship among the quantitative and dichotomous variables used in this study.

Among the type of mentoring relationship, faculty mentoring were found to be statistically positively related to perceived academic success (pb=.188, P <.01); Perceived graduation status (pb=.206, P<.001); perceived retention status (pb=.167, P<.01) and perceived persistent status (pb = .197, P <.001). In addition, peer mentoring was found to be negatively linear related to perceived retention status (pb=-.130, P < .05). Finally, the intercorrelations between the type of mentoring relationship and the four perceived dependent variables were found not to be statistically related.

Table 6

Intercorrelations Results Among the Independent and Dependent Variables

Independent Variables	Dependent Variables			
	Academic Success	Graduation Status	Retention Status	Persistence Status
Peer Mentoring	-.085	-.112	-.130*	-.115
Faculty Mentoring	0.188**	0.206***	0.167**	.197***
E-Mentoring	0.000	-.033	0.021	-.008
Group Mentoring	-.090	-.024	-.013	-.015

*Significant at the .05 level
**Significant at the .01 level
***Significant at the .001 level

Examination of Null Hypotheses

HO_1: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived academic success of undergraduate students.

Presented in Table 7 were the standard multiple regression results regarding the relationship between the type of mentoring relationship and the perceived academic success scores of undergraduate students. The regression model yielded a multiple correlation of .203. The four mentoring variables of peer, faculty, electronic, and group, together accounted for 4.1 percent (adjusted=2.6) of the variance in the perceived academic success of undergraduate students.

A significant linear relationship was found to exist between the four mentoring predictors (peer, faculty, electronic, and group) and the perceived academic success scores of undergraduate students ($F(4, 255) = 2.741$, $P < .05$). In addition, when the variables peer mentoring, e-mentoring, and group mentoring were controlled the variable faculty mentoring ($t(255) = 2.355$, $P < .05$) contribute significantly to the perceived academic success of undergraduate students. Consequently, hypothesis 1 was rejected due to the significant relationship that exist between the four mentoring variables and perceived academic success scores among undergraduate students.

Table 7

Standard Multiple Regression Results Regarding the Relationship Between Types of Mentoring Relationships and Perceived Academic Success

Model	B	SE	Beta	t	P
(Constant)	25.397	1.330			
Peer	00.751	1.513	.048	0.496	.620
Faculty	03.684	1.564	.224	2.355	.019*
Electronic	00.697	0.835	.066	0.834	.405
Group	-1.197	2.388	-.036	0.501	.617

Note. R=.203; R^2 = .041; Adjusted R^2=.026; F =2.741; df=4,255; P=.029*
Staff mentoring is the reference group
*Significant at the .05 level

HO_2: There is no statistically significant relationship between types of mentoring relationship (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived retention success of undergraduate students.

A Standard Multiple Regression statistical procedure was computed to determine the relationship between types of mentoring relationship and the perceived retention status scores of undergraduate students. As shown in Table 8, the Multiple Regression Model yielded a multiple correlation of .181. The mentoring factors of peer mentorship, faculty mentorship, e-mentorship, and group mentorship combined, accounted for 3.3

percent (Adjusted =1.8%) of the variance in the perceived retention scores among undergraduate students.

Furthermore, a statistically linear relationship was not found to exist between the four mentoring factors (peer, faculty, electronic and group) and the perceived retention scores ($F(4,255) = 2.168$, $P > .05$) of undergraduate students. Neither of the mentoring variables was found to contribute significantly to the perceived retention scores among undergraduate students. Thus hypotheses 2 was not rejected due to no significant relationship existing between the four mentoring variables and perceived retention status scores among undergraduate students.

Table 8

Standard Multiple Regression Results Regarding the Relationship Between Types of Mentoring Relationships and Perceived Retention Status

Model	B	SE	Beta	t	P
(Constant)	25.077	1.429			
Peer	0-.125	1.626	-.007	-.077	.939
Faculty	3.245	1.681	.184	1.931	.055
Electronic	0.763	0.898	.067	0.850	.396
Group	0.857	2.566	.024	0.334	.739

Note: R=.181; $R^2 = .033$; Adjusted R^2=.018; F =2.168; df=4,255; P=.073

Staff mentoring is the reference group

HO_3: There is no statistically significant relationship between types of mentoring relationship (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived graduation status of undergraduate students.

Illustrated in Table 9 were the Standard Multiple Regression findings concerning the relationship between mentoring factors (peer mentoring, faculty mentoring, e-mentoring, and group mentorship) and the perceived graduation status of undergraduate students. The regression model yielded a multiple correlation of .209. The four mentoring variables collectively were found to explain 4.4 (Adjusted = 2.9%) of the variance in the perceived graduation status scores of undergraduate students.

A statistically significant linear relationship was found to exist between types of mentoring factors (peer, faculty, electronic, and group) and the perceived graduation status scores among undergraduate students ($F(4,255) = 2.905$, $P < .05$). Furthermore, when the variables peer mentorship, e-mentorship and group mentorship were controlled, the variable faculty mentorship contribute significantly to the perceived graduation status of undergraduate student ($t(255) = 2.501$, $P < .05$). Conversely, hypothesis 3 was rejected due to the significant relationship that exist between the four mentoring variables and perceived graduation status scores among undergraduate students.

Table 9

Standard Multiple Regression Results Regarding the Relationship Between Types of Mentoring Relationships and Perceived Graduation Status

Model	B	SE	Beta	t	P
(Constant)	18.147	1.064			
Peer	.396	1.210	.031	.327	.744
Faculty	3.129	1.251	.237	2.501	.013*
Electronic	.313	0.668	.037	.469	.640
Group	.720	1.910	.027	.377	.707

Note. R=.209; R^2 = .044; Adjusted R^2=.029; F =2.905; df=4,255; P=.022*
Staff mentoring is the reference group
*Significant at the .05 level

HO_4: There is no statistically significant relationship between types of mentoring relationship (Peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived persistence status of undergraduate students.

Reported in Table 10 were the standard multiple regression analyses pertaining to the relationship between types of mentoring relationships and the perceived persistence status scores among undergraduate students. The multiple regression model yielded a multiple correlation of .205. The variables peer mentorship, faculty mentorship, e-

mentorship and group mentorship together accounted for 4.2 percent (Adjusted = 2.7%) of the variance in the perceived persistence status scores of undergraduate students.

Further, a linear relationship was found to exist between the four mentoring variables (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived persistence status scores among undergraduate students ($F(4,255) = 2.790$, $P<.05$) at the .05 level. When the variable peer mentorship, e-mentorship, and group mentorship were controlled, faculty mentorship contribute significantly to the perceived persistence status scores ($t(255) = 2.584$, $P <.01$) among undergraduate students. Therefore, hypothesis 4 was rejected due to the significant relationship that exist between the four mentoring variables and perceived persistence status among undergraduate students.

Table 10

Standard Multiple Regression Results Regarding the Relationship Between Types of Mentoring Relationships and Perceived Persistence Status

Model	B	SE	Beta	t	P
(Constant)	24.723	1.441			
Peer	00.762	1.639	.045	0.465	.643
Faculty	04.381	1.695	.245	2.584	.010**
Electronic	00.794	0.905	.069	0.877	.382
Group	01.544	2.588	.043	0.597	.551

Note. R=.205; R^2 = .042; Adjusted R^2=.027; F =2.790; df=4,255; P=.027*
Staff mentoring is the reference group
*Significant at the .05 level
**Significant at the .01 level

Summary of Hypotheses

There were four null hypotheses examined in this study. All four hypotheses were tested to determine the relationship and predictive validity of the types of mentoring factors on the perceived academic success, retention status, graduation status and persistent scores among undergraduate students. Three of the four hypotheses were found to be significant.

Hypothesis 1 regarding the relationship between types of mentoring relationships and perceived academic success, a statistically significant relationship was found

between the four mentoring factors and perceived academic success. With respect to hypothesis 2, a non-significant relationship was found between types of mentoring relationship and perceived retention status scores.

Furthermore, relative to hypothesis 3, a statistically significant relationship was found between types of mentoring relationship and the perceived graduation scores. Finally, with regards to hypothesis 4, the variables type of mentoring relationship were found to be significant predictors of perceived persistence status scores. See Table 11 for these findings.

Table 11

Summary Table of Hypotheses Tested

Hypotheses	R	R^2	F	df	Conclusion
HO_1	.203	.041	2.741*	4,255	Significant
HO_2	.181	.033	2.168	4,255	Non-Significant
HO_3	.209	.044	2.905*	4,255	Significant
HO_4	.205	.042	2.790*	4,255	Significant

*Significant at the .05

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSIONS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the predictability of types of mentoring relationships on the perceived academic success, retention status, graduation status, and persistence status of undergraduate students from two historically black colleges and universities. Specifically, this study focused on the predictable relationship between types of mentoring relationships such as peer mentorship, faculty mentorship, e-mentorship and group mentorship on the perceived academic success, retention status, graduation status, and persistence status of undergraduate students.

A correlational multiple regression design was used in this study. Two hundred sixty (260) undergraduate students were selected to participate in the study. An instrument titled Undergraduates' Perception of Performance Behavior Survey was used to collect the data in this study. This instrument was found to have content validity from a group of experts in the field of higher education. An alpha coefficient of .85 was computed for the instrument.

Furthermore, the data were tested utilizing the Standard Multiple Regression technique the following no hypothesis were formulated and tested at the .5 level or better in this study.

HO_1: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-

mentorship, and group mentorship) and the perceived academic success of undergraduate students.

HO_2: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived retention status of undergraduate students.

HO_3: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived graduation status of undergraduate student.

HO_4: There is no statistically significant relationship between types of mentoring relationships (peer mentorship, faculty mentorship, e-mentorship, and group mentorship) and the perceived persistent status of undergraduate students.

Findings

The following findings were drawn from the results of the study.

1. A linear relationship did exist between the types of mentoring relationships of peer mentorship, faculty mentorship, e-mentorship, group mentorship, and the perceived academic success of undergraduate students.
2. The variable faculty mentorship was found to be independently related to the perceived academic success of undergraduate students.
3. A statistically significant linear relationship did not exist between the mentoring related factors of peer mentorship, faculty mentorship, e-

mentorship, group mentorship and the perceived retention status of undergraduate students.

4. A significant linear relationship was found between the mentoring relationship factors of peer mentorship, faculty mentorship, e-mentorship, group mentorship and the perceived graduation status of undergraduate students.
5. The variable faculty mentorship was found to be independently related to the perceived graduation status of undergraduate students.
6. A statistically linear relationship was found between the types of mentoring factors of peer mentorship, faculty mentorship, e-mentorship, group mentorship, and the perceived persistence status of undergraduate students.
7. Finally, the mentoring relationship factors of faculty mentorship was independently related to the perceived persistent status of undergraduate students.

Discussions

One of the most interesting findings of the present study was the significant impact of type of mentoring relationship factors had on the perceived academic success of undergraduate students. Specifically, the variables peer mentorship, faculty mentorship, e-mentorship and group mentorship were found to be significantly linear related to the perceived academic success of undergraduate students.

Even though, peer mentorship, faculty mentorship, e-mentorship and group mentorship were found to be linearly related to academic success together, only faculty mentorship was found to be an independent predictor of perceived academic success among undergraduate students. Previously, findings regarding the predictable relationship

between faculty mentorship and the academic behaviors of undergraduate students were consistent with those of Haeger and Fresquez (2016), Kendricks, Nedumuri, and Arment (2013), Baker (2013), Junge, et al. (2010), and Wilson, Iyengar, Pang, Warner, and Locas (2012). All the aforementioned researchers found a positive relationship between faculty mentorship and academic success among undergraduate students.

A plausible explanation for the present finding regarding the relationship between faculty mentorship and the academic success among undergraduate students may be that faculty support is needed more so on historical black college campuses because of the academic deficiencies that a large portion of the students attending these institutions bring with them. Faculty members on black college campuses understand this dilemma and know they need to spend more time with their students to assist them in overcoming their academic challenges so they can feel more comfortable in achieving their academic potential.

Moreover, the lack of influence that peer mentoring, e-mentoring, and group mentoring, individually had on the perceived academic success of undergraduate students were not consistent with previous research conducted between these variables. Regarding peer mentorship, the findings were not favorable to those of Ashbaugh, Koegel, and Koegal (2017); Rando, Huber, and Oswald (2016); Walker and Verklan (2016); Fianco (2012); Giust and Valle-Riestra (2017); Rieske and Benjamin (2015); and Lewis (2017). However, findings regarding the lack of relationship between peer mentoring and academic success were supported in research conducted by Graham and McClain (2019), Blankenship et al. (2020), and Baker (2013).

Furthermore, the lack of predictable relationship between group mentoring and academic success among undergraduate students did not correspond to those by Chang, et al. (2016); Shojai, Davis, and Root (2014); and Toven-Lindsey, et al. (2015). Again, these researchers found a positive relationship between group mentoring and academic success among undergraduate students.

Another notable and surprising finding in the present study, was the lack of relationship found between the types of mentoring factors and the perceived retention status of undergraduate students. To be sure, peer mentorship, faculty mentorship, e-mentorship, and group mentorship were found not to be statistically linear related to retention among undergraduate students. These findings were favorable of Etzel et al. (2018), Blakenship et al. (2020), and Baker (2013) regarding peer mentoring and retention status of undergraduate students.

On the other hand, the findings regarding the predictable relationship between peer mentoring, faculty mentoring, group mentoring, and retention were not favorable to those by Schneider, Bickel, Morrison-Sheltar (2015); Tampke and Durodoge (2013); Ricks et al. (2014); Kendricks, Nedunuri, and Armen (2013); Lisbery and Woods (2018); and Proctor et al. (2018). All the above researchers found that peer, faculty, and group mentoring were significant predictors of the retention status among undergraduate students.

A reasonable explanation for the lack of a predictable relationship between types of mentoring factors and retention maybe that these factors collectively have a direct effect on the overall well-being of students attending historically black institution. Due to

the supporting and caring nature of mentorship in general, together they seem to reduce the dropout rates among undergraduate students on black college campus.

Moreover, another important finding of the current study pertained to the effects of types of mentoring relationship had on the perceived graduation status of undergraduate students. A significant linear relationship was found between peer mentoring, faculty mentoring, group mentoring, e-mentoring, and the perceived graduation status among undergraduate students. It is interesting to note that the variable faculty mentorship was an independent predictor of the perceived graduation status.

The findings regarding faculty mentorship and graduation did parallel those of Law, Haeger, and Busenbark (2020); Salto et al. (2014); and Price and Tovar (2014). These researchers found that faculty mentorship had a positive relationship with the graduation status among undergraduate students. Nevertheless, these findings did not parallel with those of Haegar and Fresquez (2016). Haeger and Fresquez found no difference between the graduation rate of mentored and none mentored undergraduate students. An explanation for the present findings may be because faculty mentorship has been found to enhance the academic self-concept of students, which directly affect and improve the graduation rate among college students.

Although, peer mentorship, group mentorship, and e-mentorship in conjunction with faculty mentorship did influence the perceived graduation status of undergraduate students; however, independently, peer, group and e-mentorship did not contribute significantly to proceed graduation status. Relative to the predictable relationship between peer mentorship on the perceived graduation status. Previous research found that

peer mentorship was significantly related to this performance behavior component. These findings were consistent with those of Perez (2017) and Kring (2017).

Further, the findings pertaining to group mentorship and perceived graduation status of undergraduate students also revealed that these variables were statistically related. Wilson et al. (2012) opined that group mentorship was an important factor in navigating undergraduate students toward graduation.

Additionally, another significant finding of the current study was the predictable relationship found between mentoring factors and perceived persistent status of undergraduate students. The combination effects of the mentoring factors of peer mentorship, faculty mentorship, group mentorship, and e-mentorship on the perceived persistent status were astonishing to say the least. All four mentoring factors together produced a linear relationship with perceived persistent status among undergraduate students. Once again, the variable faculty mentorship was found to be an independent predictor of perceived persistent status.

The above findings were supported by research conducted by Hernandez et al. (2017), and Brooms and Davis (2017). Both groups of researchers found that faculty mentorship was significantly independent related to persistence. Notwithstanding, research done by Thomas et al. (2014) found that faculty mentorship was not a statistically significant predictor of persistence among undergraduate students, particularly black college students. A substantial explanation for current findings regarding faculty mentorship and persistence maybe these undergraduate students who were exposed to mentoring by the faculty are more engaged and satisfied with their

college experience. For this reason, they are well motivated and more prepared academically to complete their education.

Finally, irrespective of the predictability of the mentoring factors of peer mentorship and group mentorship on persistence status among undergraduate students, previous research revealed that both variables were found to be statistically independently related to persistence. Regarding peer mentorship, works done by Brooms and Davis (2017), Perez (2017), and Kiyama and Luca (2014) found that this mentoring factor was a significant predictor of persistence. Also, previous research conducted by Chang et al. (2016) and Ricks et al. (2014) found that group mentorship was an independent predictor of persistence among undergraduate students.

Conclusions

The following conclusions were generated from the results of the study:

1. It was shown that the type of mentoring relationship factors of peer mentorship, faculty mentorship, e-mentorship, and group mentorship do have some predictive validity with regards to the perceived academic success of undergraduate students.
2. In general, every one-point increase in faculty mentorship there was a 3.68 increase in undergraduate students perceived academic success scores.
3. The type of mentoring relationships of peer mentorship, faculty mentorship, e-mentorship, and group mentorship had no predictive validity on the perceived retention scores of undergraduate students.

4. In general, a regression model to correctly predict the perceived graduation status of undergraduate students should include the mentoring factor of peer mentorship, faculty mentorship, e-mentorship, and group mentorship.
5. Every one-point increase in faculty mentorship scores there was a 3.13 increase in undergraduate students' perceived graduation status scores.
6. Any attempt to predict the perceived persistence status scores among undergraduate students, the predictive models should include the variables peer mentorship, faculty mentorship, e-mentorship, and group mentorship.
7. Finally, every one-point increase in faculty mentorship there was a 4.38 increase in undergraduate students perceived persistence status scores.

Implications

The following implications were offered for considerations by administrators on college campuses:

1. The significant relationship that exists between mentoring factors and the perceived academic success among undergraduate students suggests that there is a need on college campuses, especially on black college campuses, to take a serious look at the significant impact that mentorship have on the perceived performance behaviors among students. An awareness of this relationship by college administrators who are responsible for the academic preparedness of students would go a long way to enhance not only the academic self-concept but also the academic self-efficacy of students.
2. The relationship found between mentoring and factors and the perceived graduation status among undergraduate students suggest there is a need for not

only college administrators but all the entities of the institution to consider the significant effect of mentoring on college completion. A functional understanding on the part of administrators, faculty, and staff on the total benefit that various mentoring relationship programs bring to the college environment is vital in improving the graduation rate, particularly at historically black colleges and universities.

3. Finally, this significant relationship found between mentoring factors and the perceived persistence status among undergraduate students suggest that academic advisors and other service-related personnel on college campuses should be aware of the influence that type of mentoring relationships have on students remaining in school. It should be pointed out that some undergraduate students who have persisted in college for the most part have been exposed to some type of mentoring relationship. It is from this frame of reference that various mentoring relationships have been used as intervention strategies by some administrator on college campuses to help undergraduate students to persist in college.

Recommendations for Further Research

To further extend the findings of this study, I recommend that:

1. A study should be conducted to examine the predictive power of selected components of mentoring programs on the overall academic well-being of college students.

2. A study should be conducted to investigate the attitudes of students regarding the benefits of mentoring relationship on college campuses across their demographic characteristics.
3. A follow-up study should be conducted, to include a large sample of institutions of higher learning from various geographic locations in the United States, such a study would provide more pertinent data on the effects of peer mentorship, faculty mentorship, e-mentorship, and group mentorship on the academic, retention, persistence, and graduation performance behaviors of college students.
4. Finally, a study should be conducted to compare the similarities and differences in the mentoring relationships on HBCU and PWI college campuses.

APPENDICES

APPENDIX A

LETTER OF REQUEST

Hello,

My name is Jeffery Lindsey. I am a doctoral student at Texas Southern University, Houston, Texas. I am preparing to write my dissertation. My interest is in studying "The Predictability of Types of Mentoring Relationships on the Perceived Performance Behaviors of College Undergraduate Students." I am writing to ask if you would share a list of your undergraduate students' emails. Please e-mail me at: Jeffery.Lindsey@tsu.edu

Your consideration is appreciated.

Jeffery Lindsey
Doctoral Candidate
Department of Educational Administration & Foundations
Texas Southern University

APPENDIX B

LETTER OF PERMISSION

Mr. Lindsey,

Please find document(s) responsive to your request attached.

We do not have an approval letter. However, TSU is a governmental body subject to Texas Government Code, Chapter 552, (the Texas Public Information Act), which gives the public a right of access to information collected, assembled, maintained, owned or controlled by a governmental body in connection with the transaction of official business (public information). Governmental bodies shall promptly release requested information that is not confidential by law, either constitutional, statutory, or by judicial decision, or information for which an exception to disclosure has not been sought.

We now consider your request closed.

Thank you.

APPENDIX C

UNDERGRADUATES' PERCEPTION OF PERFORMANCE BEHAVIORS SURVEY

UNDERGRADUATES' PERCEPTION OF PERFORMANCE BEHAVIORS SURVEY

Part I: Demographic Information

DIRECTIONS: PLEASE CHECK THE APPROPRIATE RESPONSE

1. **What is your current classification?**
   - o Freshman
   - o Sophomore
   - o Junior
   - o Senior
   - o Fifth year senior

2. **What is your gender?**
   - o Male
   - o Female
   - o Other (Please specify) _____

3. **What is your age?**
   - o 18 and below
   - o 19-20
   - o 21-22
   - o 23 and above

4. **What is your ethnicity?**
   - o White (Non-Hispanic/Canada/ European Countries)
   - o Hispanic or Latino
   - o Black or African American
   - o Native American or American Indian
   - o South Asian (India/Pakistan/Afghanistan)
   - o Middle Eastern
   - o Asian (Chinese/Japanese/ Vietnamese/Korean/ Southeast Asian Countries)
   - o Multiracial
   - o Other (Please specify)_____

5. **What type of mentorship did you receive?**
   - o Peer Mentorship
   - o Faculty Mentorship
   - o Electronic Mentorship (Mentorship through Facebook, Instagram, Linked In, etc.)
   - o Group Mentorship

Part II: Student's Perception of Performance Behavior **DIRECTIONS: PLEASE CIRCLE THE APPROPRIATE RESPONSE FOR EACH STATEMENT** (1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree)					
Student's Perception Regarding Academic Success					
1. My mentoring relationship provided me with information about tutoring opportunities for areas I may struggle with.	1	2	3	4	5
2. My mentoring relationship helped me to track my academic progress throughout the semester.	1	2	3	4	5
3. My mentoring relationship stressed the importance of my academic performance.	1	2	3	4	5
4. My mentoring mentorship relationship provided me with strategiesto improve my academic performance when goals are not met.	1	2	3	4	5
5. My mentoring relationship helped me to outline a blueprint for my academic goals and objectives.	1	2	3	4	5
6. My mentoring relationship encouraged me to set time aside to complete my homework and study.	1	2	3	4	5
7. My mentoring relationship instilled in me to ask questions regarding my views toward my academic performance.	1	2	3	4	5
Student's Perception Regarding Retention Status					
8. My mentoring relationship was very helpful in recommending me to participant in campus events and activities.	1	2	3	4	5

9. My mentoring relationship provided me with information on additional services such as counseling, career, and health centers.	1	2	3	4	5
10. My mentoring relationship encouraged me to join campus organizations.	1	2	3	4	5
11. My mentoring relationship helped me to feel comfortable in terms of campus environment.	1	2	3	4	5
12. My mentoring relationship helped me to be concerned about my wellbeing throughout the semester	1	2	3	4	5
13. My mentoring relationship helped me to exhibit cultural competence.	1	2	3	4	5
14. My mentoring relationship provided me with opportunities that relate to my interests and needs.	1	2	3	4	5
Student's Perception Regarding Persistence Status					
15. My mentoring relationship provided me with support and guidance each year I am enrolled in classes.	1	2	3	4	5
16. My mentoring relationship helped me in my comparison of my current and past year academic performance in order to track my academic progress.	1	2	3	4	5
17. My mentoring relationship encouraged me to complete my education.	1	2	3	4	5
18. My mentoring relationship helped in discussing my expectationsfor the following academic school year.	1	2	3	4	5
19. My mentoring relationship motivated me to register for classes.	1	2	3	4	5

20. My mentoring relationship helped me in my decision to meet my academic advisor.	1	2	3	4	5
21. My mentoring relationship encouraged me to follow my degree plan.	1	2	3	4	5
Student's Perception Regarding Graduation Status					
22. My mentoring relationship provided me with the guidance needed to complete my college degree.	1	2	3	4	5
23. My mentoring relationship provided me with resources that help me to successfully navigate my degree.	1	2	3	4	5
24. My mentoring relationship provided me quality advice thatmotivates me to complete my academic journey.	1	2	3	4	5
25. My mentoring relationship helped me to navigate through obstacles that may prevent me from graduating.	1	2	3	4	5
26. My mentoring relationship provided me with information that stresses the importance of receiving a college degree.	1	2	3	4	5

REFERENCES

REFERENCES

Aschenbrener, C., & Johnson, S. (2017). Educationally-based, culturally-sensitive, theory-driven mentorship intervention with at-risk native American youth in south dakota: A narrative review. *Journal of Child and Family Studies*, *26*(1), 14-27. https://doi.org/10.1007/s10826-016-0537-z

Asgari, S., & Carter, F. (2016). Peer mentors can improve academic performance: A quasi-experimental study of peer mentorship in introductory courses. *Teaching of Psychology*, *43*(2), 131-135. https://doi.org/10.1177/0098628316636288

Ashbaugh, K., Koegel, R. L., & Koegel, L. K. (2017). Increasing social integration for college students with autism spectrum disorder. *Behavioral Development Bulletin*, *22*(1), 183-196. http://dx.doi.org/10.1037/bdb0000057

Baier, S. T., Markman, B. S., & Pernice-Duca, F. M. (2016). Intent to persist in college freshmen: The role of self-efficacy and mentorship. *Journal of College Student Development*, *57*(5), 614-619. https://doi.org/10.1353/csd.2016.0056

Baker, C. N. (2013). Social support and success in higher education: The influence of on-campus support on African American and Latino college students. *The Urban Review*, *45*(5), 632-650. https://doi.org/10.1007/s11256-013-0234-9

Bandura, A., & McClelland, D. C. (1977). *Social learning theory* (Vol. 1). Prentice Hall: Englewood cliffs.

Bierema, L. L., & Merriam, S. B. (2002). E-mentoring: Using computer mediated communication to enhance the mentoring process. *Innovative Higher Education*, *26*(3), 211-227. https://doi.org/10.1023/A:1017921023103

Blankenship, B. B., Canning, P. C., & Deasy, P. (2020). Does our peer mentoring program help?: Effects on probation students' academic possible selves, GPA, and retention. *Journal of Organizational Psychology*, *20*(3), 91-101. https://doi.org/10.33423/jop.v20i3.2942

Bonin, E. (2013). Effect of peer mentors on academic performance. *Rivier Academic Journal, 9(2), 1-7*. https://www2.rivier.edu/journal/ROAJ-Fall-2013/J821-Bonin_DCLL.pdf

Brittian, A. S., Sy, S. R., & Stokes, J. E. (2009). Mentoring: Implications for African American college students. *The Western Journal of Black Studies, 33(2), 97-97.* https://www.researchgate.net/publication/286956469_Mentoring_Implications_for_African_American_college_students

Brondyk, S., & Searby, L. (2013). Best practices in mentoring: Complexities and possibilities. *International Journal of Mentoring and Coaching in Education*, *2*(3), 189-203. https://doi.org/10.1108/IJMCE-07-2013-0040

Brooms, D. R., & Davis, A. R. (2017). Staying focused on the goal: Peer bonding and faculty mentors supporting black males' persistence in college. *Journal of Black Studies*, *48*(3), 305-326.

https://doi.org/10.1177/0021934717692520

Budny, D., Paul, C., & Newborg, B. B. (2010). Impact of peer mentoring on freshmen engineering students. *Journal of STEM Education: Innovations and Research*, *11*(5), 9-24. https://jstem.org/jstem/index.php/JSTEM/article/view/1471/1325

Burrus, J., Elliott, D., Brenneman, M., Markle, R., Carney, L., Moore, G., & Roberts, R. D. (2013). Putting and keeping students on track: Toward a comprehensive model of college persistence and goal attainment. *ETS Research Report Series*, *2013*(1), i-61. https://origin-www.ets.org/Media/Research/pdf/RR-13-14.pdf

Cataldi, E. F., Bennett, C. T., & Chen, X. (2018). First-generation students: College access, persistence, and post bachelor's outcomes. Stats in Brief. NCES 2018-421. *National Center for Education Statistics*. https://nces.ed.gov/pubs2018/2018421.pdf

Cerezo, A., & Chang, T. (2013). Latina/o achievement at predominantly white universities: The importance of culture and ethnic community. *Journal of Hispanic Higher Education*, *12*(1), 72-85. https://doi.org/10.1177/1538192712465626

Chang, J. M., Buonora, P., Stevens, L., & Kwon, C. (2016). Strategies to recruit and retain students in physical sciences and mathematics on a diverse college campus. *Journal of College Science Teaching*, *45*(3), 14-22. http://digital.nsta.org/publication/?i=285569&article_id=2354231&view=articleBrowser&ver=html5

Christe, B. L. (2013). The importance of faculty-student connections in STEM disciplines. *Journal of STEM Education: Innovations and Research*, *14*(3) 22-26.

Collier, P. (2017). Why peer mentoring is an effective approach for promoting college student success. *Metropolitan Universities*, *28*(3), 9-19. https://doi.org/10.18060/21539

Colvin, J. W., & Ashman, M. (2010). Roles, risks, and benefits of peer mentoring relationships in higher education. *Mentoring & Tutoring: Partnership in Learning*, *18*(2), 121-134. https://doi.org/10.1080/13611261003678879

Crisp, G., Baker, V. L., Griffin, K. A., Lunsford, L. G., & Pifer, M. J. (2017). Mentoring undergraduate students. *ASHE Higher Education Report*, *43*(1), 7–103. https://tsuhhelweb.tsu.edu:2089/10.1002/aehe.20117

Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the literature between 1990 and 2007. *Research in Higher Education*, *50*(6), 525-545. https://doi.org/10.1007/s11162-009-9130-2

DeAngelo, L., Mason, J., & Winters, D. (2016). Faculty engagement in mentoring undergraduate students: How institutional environments regulate and promote extra-role behavior. *Innovative Higher Education*, *41*(4), 317-332. 10.1007/S10755-015-9350-7

DeFreitas, S. C., & Bravo Jr, A. (2012). The Influence of involvement with faculty and mentoring on the self-efficacy and academic achievement of African American and Latino college students. *Journal of the Scholarship of Teaching and Learning*, *12*(4), 1-11.

https://files.eric.ed.gov/fulltext/EJ992123.pdf

Dennehy, T. C., & Dasgupta, N. (2017). Female peer mentors early in college increase women's positive academic experiences and retention in engineering. *Proceedings of the National Academy of Sciences*, *114*(23), 5964-5969. 10.1073/pnas.1613117114

De Janasz, S. C., & Godshalk, V. M. (2013). The role of e-mentoring in protégés' learning and satisfaction. *Group & Organization Management*, *38*(6), 743-774. https://doi.org/10.1177/1059601113511296

Demetriou, C., Meece, J., Eaker-Rich, D., & Powell, C. (2017). The activities, roles, and relationships of successful first-generation college students. *Journal of College Student Development*, *58*(1), 19-36. https://doi.org/10.1353/csd.2017.0001

Dziczkowski, J. (2013). Mentoring and leadership development. *The Educational Forum*,77(3), 351-360. https://doi.org/10.1080/00131725.2013.792896

Eller, L. S., Lev, E. L., & Feurer, A. (2014). Key components of an effective mentoring relationship: A qualitative study. *Nurse Education Today*, *34*(5), 815-820. 10.1016/j.nedt.2013.07.020

Etzel, A. M., Alqifari, S. F., Shields, K. M., Wang, Y., & Bileck, N. B. (2018). Impact of student to student peer mentoring program in first year of pharmacy program. *Currents in Pharmacy Teaching and Learning*, *10*(6), 762-770. 10.1016/j.cptl.2018.03.009

Ficano, C. C. (2012). Peer effects in college academic outcomes: Gender matters! *Economics of Education Review*, *31*(6), 1102-1115. 10.1016/j.econedurev.2012.07.012

Fries-Britt, S., & Snider, J. (2015). Mentoring outside the line: The importance of authenticity, transparency, and vulnerability in effective mentoring relationships. *New Directions for Higher Education*, *2015*(171), 3-11. https://doi.org/10.1002/he.20137

Fuentes, M. V., Alvarado, A. R., Berdan, J., & DeAngelo, L. (2014). Mentorship matters: Does early faculty contact lead to quality faculty interaction? *Research in Higher Education*, *55*(3), 288-307. 10.1007/s11162-013-9307-6

Garcia, G. A. (2013). Does percentage of Latinas/os affect graduation rates at 4-year Hispanic serving institutions (HSIs), emerging HSIs, and non-HSIs?. *Journal of Hispanic Higher Education, 12(3), 256-268.* https://doi.org/10.1177/1538192712467203

Gay, L. R., Mills, G. E., & Airasian, P. (2012). *Educational research competencies for analysis and applications.* 10th ed. Boston: Pearson.

Gentry, R. (2014). Sustaining college students' persistence and achievement through exemplary instructional strategies. *Research in Higher Education Journal*, *24*, 1-14. https://files.eric.ed.gov/fulltext/EJ1064117.pdf

Gibson, B. (2014). The impact of mentoring programs for African American male community college students. *Journal of Manson Graduate Research*, 1(2) 70-82.

Giust, A. M., & Valle-Riestra, D. M. (2017). Supporting mentors working with students with intellectual disabilities in higher education. *Journal of Intellectual*

Disabilities, *21*(2), 144-157. https://doi.org/10.1177/1744629516651019

Goldman, M. (1997). Perspective on telementoring and mentor center. *National School Network Telementoring & Mentor Center*. http://nsn.bbn.com/ telementor wrkshp/goldman.html

Graham, J., & McClain, S. (2019). A canonical correlational analysis examining the relationship between peer mentorship, belongingness, impostor feelings, and black collegians' academic and psychosocial outcomes. *American Educational Research Journal*, *56*(6), 2333-2367. https://doi.org/10.3102/0002831219842571

Gregg, N., Wolfe, G., Jones, S., Todd, R., Moon, N., & Langston, C. (2016). Stem e-mentoring and community college students with disabilities. *Journal of Postsecondary Education and Disability*, *29*(1), 47-63. https://files.eric.ed.gov/fulltext/EJ1107474.pdf

Guzzardo, M. T., Khosla, N., Adams, A. L., Bussmann, J. D., Engelman, A., Ingraham, N., & Taylor, S. (2020). The ones that care make all the difference: Perspectives on student-faculty relationships. *Innovative Higher Education*, 46, 1-18. 10.1007/s10755-020-09522-w

Haeger, H., & Fresquez, C. (2016). Mentoring for inclusion: The impact of mentoring on undergraduate researchers in the sciences. *CBE—Life Sciences Education*, *15*(3). 10.1187/cbe.16-01-0016

Haran, V. V., & Jeyaraj, A. (2019). Organizational E-Mentoring and Learning: An Exploratory Study. *Information Resources Management Journal (IRMJ)*, *32*(1), 58-72. 10.4018/IRMJ.2019010104

Hernandez, P. R., Bloodhart, B., Barnes, R. T., Adams, A. S., Clinton, S. M., Pollack, I., & Fischer, E. V. (2017). Promoting professional identity, motivation, and persistence: Benefits of an informal mentoring program for female undergraduate students. *PloS one*, *12*(11), e0187531. https://doi.org/10.1371/journal.pone.0187531

Hu, S., & Ma, Y. (2010). Mentoring and student persistence in college: A study of the Washington state achievers' program. *Innovative Higher Education*, *35*(5), 329-341. 10.1007/s10755-010-9147-7

Huizing, R. L. (2012). Mentoring together: A literature review of group mentoring. *Mentoring & Tutoring: Partnership in Learning*, *20*, 27–55. https://doi.org/10.1080/13611267.2012.645599

Junge, B., Quinones, C., Kakietek, J., Teodorescu, D., & Marsteller, P. (2010). Promoting undergraduate interest, preparedness, and professional pursuit in the sciences: An outcomes evaluation of the SURE program at Emory University. *CBE—Life Sciences Education*, *9*(2), 119-132. https://doi.org/10.1187/cbe.09-08-0057

Kaul, S., Ferguson, C. W., Yan, Y. & Yanik, P. M. (2019). Triangulated mentorship of engineering students leveraging peer mentoring and vertical integration. *Global Journal of Engineering education*, *21*(1) 14-23. *http://www.wiete.com.au/journals/GJEE/Publish/vol21no1/02-Kaul-S.pdf*

Kendricks, K., Nedunuri, K. V., & Arment, A. R. (2013). Minority student perceptions of the impact of mentoring to enhance academic performance in stem disciplines. *Journal of STEM Education: Innovations and Research*, *14*(2) 38-46.

Kezar, A., & Maxey, D. (2014). Faculty matter: So why doesn't everyone think so. *Thought & Action, 2014*, 29-44. https://www.uog.edu/_resources/files/faculty-senate/kezar_article.pdf

Kiyama, J. M., & Luca, S. G. (2014). Structured opportunities: Exploring the social and academic benefits for peer mentors in retention programs. *Journal of College Student Retention: Research, Theory & Practice*, *15*(4), 489–514. https://doi.org/10.2190/CS.15.4.b

Komarraju, M., Musulkin, S., & Bhattacharya, G. (2010). Role of student–faculty interactions in developing college students' academic self-concept, motivation, and achievement. *Journal of College Student Development*, *51*(3), 332-342. https://doi.org/10.1353/csd.0.0137

Kring, M. (2017). Supporting college students through peer mentoring: Serving immigrant students. *Metropolitan Universities*, *28*(3), 102-110. https://files.eric.ed.gov/fulltext/EJ1152725.pdf

Kroll, J. (2016). What is meant by the term group mentoring?. *Mentoring & Tutoring: Partnership in Learning*, *24*(1), 44-58. https://doi.org/10.1080/13611267.2016.1165488

Law, D. D., Hales, K., & Busenbark, D. (2020). Student success: A literature review of faculty to undergraduate mentoring. *Journal on Empowering Teaching Excellence, 4, (*22) https://doi.org/10.15142/38x2-n847

Lewis, C. (2017). Creating Inclusive Campus communities: The vital role of peer mentorship in inclusive higher education. *Metropolitan Universities*, *28*(3), 20-29. DOI: 10.18060/21540

Linley, J. L., Nguyen, D., Brazelton, G. B., Becker, B., Renn, K., & Woodford, M. (2016). Faculty as sources of support for LGBTQ college students. *College Teaching*, *64*(2), 55-63. https://doi.org/10.1080/87567555.2015.1078275

Lisberg, A., & Woods, B. (2018). Mentorship, mindset and learning strategies: An integrative approach to increasing underrepresented minority student retention in a stem undergraduate program. *Journal of STEM Education*, *19*(3) 14-20.

Luedke, C. L. (2017). Person first, student second: Staff and administrators of color supporting students of color authentically in higher education. *Journal of College Student Development*, *58*(1), 37-52. https://doi.org/10.1353/csd.2017.0002

Lund, T. J., Liang, B., Konowitz, L., White, A. E., & DeSilva Mousseau, A. (2019). Quality over quantity?: Mentoring relationships and purpose development among college students. *Psychology in the Schools*, *56*(9), 1472–1481.

Markle, G. (2015). Factors influencing persistence among nontraditional university students. *Adult Education Quarterly*, *65*(3), 267-285. https://doi.org/10.1177/0741713615583085

Merriam-Webster. (n.d.). Grade point average. In *Merriam-Webster.com dictionary*. Retrieved January 13, 2021, from https://www.merriam-webster.com/dictionary/grade%20point%20average

Mertler, C.A., & Vannatta Reinhart, R. (2016). *Advanced and multivariate statistical methods: Practical application and interpretation 6*, Routledge. https://doi.org/10.4324/9781315266978

Mollica, M., & Mitchell, A. (2013). Increasing retention and student satisfaction utilizing an online peer mentoring program: Preliminary results. *Procedia-Social and Behavioral Sciences, 106*, 1455-1461. https://doi.org/10.1016/j.sbspro.2013.12.163

Morrow, J., & Ackermann, M. (2012). Intention to persist and retention of first year students: The importance of motivation and sense of belonging. *College student journal, 46*(3), 483-491.

Mullen, C. A. (2016). Alternative mentoring types. *Kappa Delta Pi Record, 52*(3), 132-136. 10.1080/00228958.2016.1191901

Mullen, S. (2012). An integrative model for e-mentoring Christian education students. *Christian Education Journal, 9*(2), 386-395. https://doi.org/10.1177/073989131200900210

Nabavi, R. T. (2012). Bandura's social learning theory & social cognitive learning theory. Theory of Developmental Psychology. 1-24.

National Center for Education Statistics. U.S. Department of Education, (2020). *The Condition of Education 2020 (NCES 2020-144), Undergraduate Retention and Graduation Rates.*

National Center for Education Statistics (NCES). (2016, December). *Graduation Rates*. https://nces.ed.gov/pubs2017/2017046.pdf.

Neely, A. R., Cotton, J., & Neely, A. D. (2017). E-mentoring: A model and review of the literature. *AIS Transactions on Human-Computer Interaction, 9*(3), 220-242. 10.17705/1THCI.00096

Nguyen, M., Bibo, E. W., & Engle, J. (2012). Advancing to completion: Increasing

degree attainment by improving graduation rates and closing gaps for African-American students. *Education Trust*. 1-14. https://edtrust.org/wp-content/uploads/2013/10/Advancing_Hisp.pdf

O'Keeffe, P. (2013). A sense of belonging: Improving student retention. *College Student Journal*, *47*(4), 605-613.

Osborne, J. W., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research & Evaluations, 8*(2), 1-5. : https://doi.org/10.7275/r222-hv23

Patrick, S., & Wessel, R. D. (2013). Faculty mentorship and transition experiences of students with disabilities. *Journal of Postsecondary Education and Disability*, *26*(2), 105-118. https://files.eric.ed.gov/fulltext/EJ1026835.pdf

Pérez, D. (2017). In pursuit of success: Latino male college students exercising academic determination and community cultural wealth. *Journal of College Student Development*, *58*(2), 123-140. https://doi.org/10.1353/csd.2017.0011

Pfund, C., Byars-Winston, A., Branchaw, J., Hurtado, S., & Eagan, K. (2016). Defining attributes and metrics of effective research mentoring relationships. *AIDS and Behavior*, *20*(2), 238-248. 10.1007/s10461-016-1384-z

Plotkowski, P. D., & Joseph, J. L. (2011). Enhancing graduation rates through high impact activities: Experiential learning, engagement, mentoring, and scholarships. In *Proceedings of the American Society for Engineering Education Annual Conference*, (1-9).

Price, D. V., & Tovar, E. (2014). Student engagement and institutional graduation rates: Identifying high-impact educational practices for community

colleges. *Community College Journal of Research and Practice*, *38*(9), 766-782. https://doi.org/10.1080/10668926.2012.719481

Proctor, S. L., Nasir, A., Wilson, T., Li, K., & Castrillon, P. (2018). Retention and persistence of African American students in school psychology programs. *Psychology in the Schools*, *55*(5), 506-522. https://doi.org/10.1002/pits.22124

Ramos, B. N. (2019). Moving from access to success: How first-generation students of color can build resilience in higher education through mentorship. *The Vermont Connection*, *40*(1)9, 55-61. https://scholarworks.uvm.edu/cgi/viewcontent.cgi?article=1331&context=tvc

Rando, H., Huber, M. J., & Oswald, G. R. (2016). An academic coaching model intervention for college students on the autism spectrum. *Journal of Postsecondary Education and Disability*, *29*(3), 257-262. https://files.eric.ed.gov/fulltext/EJ1123790.pdf

Rhodes, D. (2008). Does mentoring really work for college students. *Allied Academies*. 15(2), 123-127. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.498.5233&rep=rep1&type=pdf#:~:text=The%20results%20showed%20that%20mentoring,should%20consider%20implementing%20mentoring%20programs.

Ricks, K. G., Richardson, J. A., Stern, H. P., Taylor, R. P., & Taylor, R. A. (2014). An engineering learning community to promote retention and graduation of at-risk engineering students. *American Journal of Engineering Education*, *5*(2), 73-90. https://files.eric.ed.gov/fulltext/EJ1053283.pdf

Rieske, L. J., & Benjamin, M. (2015). Utilizing peer mentor roles in learning communities. *New Directions for Student Services*, *2015*(149), 67-77. https://doi.org/10.1002/ss.20118

Risquez, A., & Sanchez-Garcia, M. (2012). The jury is still out: Psychoemotional support in peer e-mentoring for transition to university. *The Internet and Higher Education*, *15*(3), 213-221. 10.1016/j.iheduc.2011.11.003

Rowland, K. N. (2012). E-mentoring: An innovative twist to traditional mentoring. *Journal of technology management & innovation*, *7*(1), 228-237. https://doi.org/10.4067/S0718-27242012000100015

Salto, L. M., Riggs, M. L., De Leon, D. D., Casiano, C. A., & De Leon, M. (2014). Underrepresented minority high school and college students report stem-pipeline sustaining gains after participating in the Loma Linda University summer health disparities research program. *PloS one*, *9*(9), e108497. 10.1371/journal.pone.0108497

Sanfey, H., Hollands, C., & Gantt, N. L. (2013). Strategies for building an effective mentoring relationship. *The American Journal of Surgery*, *206*(5), 714-718. 10.1016/j.amjsurg.2013.08.001

Sato, T., Eckert, K., & Turner, S. L. (2018). Perceptions of black student athletes about academic mentorship at a predominantly white institution in higher education. *The Urban Review*, *50*(4), 559-583. https://doi.org/10.1007/s11256-018-0456-y

Schneider, K. R., Bickel, A., & Morrison-Shetlar, A. (2015). Planning and implementing a comprehensive student-centered research program for first-year stem undergraduates. *Journal of College Science Teaching*, *44*(3), 37-43.

Seirup, H., & Rose, S. (2011). Exploring the effects of hope on GPA and retention among college undergraduate students on academic probation. *Education Research International, 1-7. 10.1155/2011/381429*

Shojai, S., Davis, W. J., & Root, P. S. (2014). Developmental relationship programs: An empirical study of the impact of peer-mentoring programs. *Contemporary Issues in Education Research (CIER)*, *7*(1), 31-38. *https://files.eric.ed.gov/fulltext/EJ1073273.pdf*

Shook, J. L., & Keup, J. R. (2012). The benefits of peer leader programs: An overview from the literature. *New directions for higher education, 2012*(157), 5-16. 10.1002/he.20002

Simmons, L. D. (2013). Factors of persistence for African American men in a student support organization. *The Journal of Negro Education* 82(1), 62-74. 10.7709/jnegroeducation.82.1.0062

Sinanan, A. (2016). The value and necessity of mentoring African American college students at pwi's. *Journal of Pan African Studies*, *9*(8), 155-166. http://www.jpanafrican.org/docs/vol9no8/9.8-X-10-Sinanan%20(1).pdf

Sithole, A., Chiyaka, E. T., McCarthy, P., Mupinga, D. M., Bucklein, B. K., & Kibirige, J. (2017). Student attraction, persistence, and retention in stem programs: Successes and continuing challenges. *Higher Education Studies*, *7*(1), 46-59. https://files.eric.ed.gov/fulltext/EJ1126801.pdf

Soria, K. M., & Stebleton, M. J. (2012). First-generation students' academic engagement and retention. *Teaching in Higher Education*, *17*(6), 673-685. https://doi.org/10.1080/13562517.2012.666735

Talbert, P. Y. (2012). Strategies to increase enrollment, retention, and graduation rates. *Journal of Developmental Education*, *36*(1), 22. https://files.eric.ed.gov/fulltext/EJ1035683.pdf

Tampke, D. R., & Durodoye, R. (2013). Improving academic success for undecided students: A first-year seminar/learning community approach. *Learning Communities: Research & Practice*, *1*(2), 1-17. https://files.eric.ed.gov/fulltext/EJ1112851.pdf

Thomas, J. C., Wolters, C., Horn, C., & Kennedy, H. (2014). Examining relevant influences on the persistence of African American college students at a diverse urban university. *Journal of College Student Retention: Research, Theory & Practice*, *15*(4), 551-573. https://doi.org/10.2190/CS.15.4.e

Todd, R. L., Moon, N. W., & Langston, C. (2016). E-mentoring and its relevance for competency-based education for students with disabilities: Research from the GSAA Breakthru model. *The Journal of Competency-Based Education*, *1*(1), 17-30. https://doi.org/10.1002/cbe2.1009

Tovar, E. (2015). The role of faculty, counselors, and support programs on Latino/a community college students' success and intent to persist. *Community College Review*, *43*(1), 46-71. https://doi.org/10.1177/0091552114553788

Toven-Lindsey, B., Levis-Fitzgerald, M., Barber, P. H., & Hasson, T. (2015). Increasing persistence in undergraduate science majors: A model for institutional support of underrepresented students. *CBE—Life Sciences Education*, *14*(2). https://doi.org/10.1187/cbe.14-05-0082

Van Vliet, K. J., Klingle, K. E., & Hiseler, L. E. (2013). The mentorship of undergraduate students in counselling psychology research. *Counselling Psychology Quarterly*, *26*(3/4), 406–426. https://tsuhhelweb.tsu.edu:2089/10.1080/09515070.2013.844095

Walker, D., & Verklan, T. (2016). Peer mentoring during practicum to reduce anxiety in first-semester nursing students. *Journal of Nursing Education*, *55*(11), 651-654. 10.3928/01484834-20161011-08

Walters, G., & Kanak, A. (2016). Effects of peer mentorship on student leadership. *Honors in Practice, 12*, 59-76. https://files.eric.ed.gov/fulltext/EJ1104353.pdf

Warner, R. M. (2012). *Applied statistics: From bivariate through multivariate techniques*. Sage Publications.

Wilbanks, J. E. (2014). E-mentoring: Examining the feasibility of electronic, online, or distance mentoring. *Journal of higher education theory and practice*, *14*(5), 24-28. http://www.na-businesspress.com/JHETP/WilbanksJE_Web14_5_.pdf

Williams, S., Sunderman, J., & Kim, J. (2012). E-mentoring in an online course: Benefits and challenges to e-mentors. *International Journal of Evidence Based Coaching & Mentoring*, *10*(1) 109-123. https://radar.brookes.ac.uk/radar/items/5a23e628-e881-48df-8eb3-7d0397934c0e/1/

Wilson, Z. S., Iyengar, S. S., Pang, S. S., Warner, I. M., & Luces, C. A. (2012). Increasing access for economically disadvantaged students: The NSF/CSEM & S-STEM programs at Louisiana State University. *Journal of Science Education and Technology*, *21*(5), 581-587. 10.1007/s10956-011-9348-6

Yomtov, D., Plunkett, S. W., Efrat, R., & Marin, A. G. (2017). Can peer mentors improve first-year experiences of university students? *Journal of College Student Retention: Research, Theory & Practice*, *19*(1), 25-44. https://doi.org/10.1177/1521025115611398

York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research, and Evaluation*, *20*(1), 1-20. http://pareonline.net/getvn.asp?v=20&n=5

Zachary, L. (2014). Group mentoring: Strategies for success in group mentoring. Retrieved from humanresources.about.com/od/coachingmentoring/a/group_mentoring.htm

Zaniewski, A. M., & Reinholz, D. (2016). Increasing STEM success: A near-peer mentoring program in the physical sciences. *International Journal of STEM Education*, *3*(1), 1-12. https://doi.org/10.1186/s40594-016-0043-2

Zevallos, A. L., & Washburn, M. (2014). Creating a culture of student success: The seek scholars peer mentoring program. *About Campus*, *18*(6), 25-29. https://doi.org/10.1002/abc.21141