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Promoting Positive Academic Beliefs And Performance: Exploring The Impact Of An Academic Enrichment Program

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Promoting Positive Academic Beliefs and Performance: Exploring the Impact
of an Academic Enrichment Program

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DEDICATION

I simply dedicate my dissertation to every minority, first generation, and low income student who has entered college determined to break stereotypes, overcome barriers, and find ways to achieve. I love and admire you all and encourage you to let nothing stand in your way. Know that you can do anything you set out to do if you put in the time, energy, and effort. Let no one or anything, including yourself, deter you from your goals. You can and you will make it! To my Lord and Savior who has blessed me and been my rock during this journey, his love has been abundant and even when I have felt undeserving of his favor, he has continued to bless me. To my loving mother Mary Avery, I thank you for praying for me, being there for me, and giving me the space to be resilient. I love you unconditionally! To my father Lee Avery, I thank you for supporting me and always knowing what to say to keep me on track. You both have always been a strong presence in my life and I thank you for pushing me academically. I would not be where I am now without you both. To my big-little sister Stacey Avery-Esters, I am so thankful to have grown up with you. The memories we share reflect some of the most difficult times in our lives and also some of the best and I would not have wanted to share them with anyone else but you. I am so glad that we have grown closer, but even when we were busy living our own lives, the bond we shared was unbreakable. I love you to pieces.

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ABSTRACT

First generation and low income college students experience unique achievement-related barriers not typically experienced by their counterparts whose parents attended college and/or are of higher socioeconomic status (Hahs-Vaugn, 2004; Kahlenberg, 2004; Mortensen, 2003; Prospero & Vohra-Gupta, 2007). Academic enrichment programs that target first generation and low income college youth are one strategy that has helped to address these concerns. To extend literature in this area, the current study sought to identify factors that may be promotive of and/or barriers to first generation and low income youths' achievement-related outcomes. Furthermore, this investigation sought to explore whether an academic enrichment program, namely the McNair Scholars Program, was associated with these youths' achievement outcomes after accounting for promotive/barrier factors. McNair impacts on first generation and low income students' outcomes were also explored. In the current study, it was found that 1) family support and campus climate were associated with first generation and low income youths' academic self-concept, 2) performance & strategy feedback and campus climate were associated with academic self-efficacy, 3) family support was associated with educational expectations, 4) McNair was significantly related to academic self-concept and academic self-efficacy, above and beyond the variance accounted for by barrier/promotive factors, and 5) McNair scholars had significantly higher GPAs after participating in McNair. Conclusions and relevant implications are discussed.

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CHAPTER 1

INTRODUCTION

The transition between high school and college has been regarded as a novel

period marked by greater autonomy coupled with higher educational expectations for

youth (Terenzini, Rendon, Upcraft, Millar, Alllison, Gregg, & Jalomo, 1994; Terenzini,

1993). While some students fare well during this transition, others experience greater

difficulty adjusting to the collegiate environment. In particular, first generation college

students face unique challenges during this transition that may negatively impact their

academic success (Kazmarek, Matlock, & Franco, 1990; Terenzini, 1993). Studies

demonstrate that these youths are more likely to work longer hours, have greater financial

and family issues, drop out of four-year institutions by their second year, and have fewer

credits by their third year (Hahs-Vaugn, 2004; Prospero & Vohra-Gupta, 2007). On the

other hand, non-first generation college students are more likely to be employed part-time

vs. full time, have taken intensive college prep courses, have higher high school GPAs,

and have higher SAT/ACT scores (McCarron & Inkelas, 2006; Strayhorn, 2006). These

differences illustrate the increased struggles that first generation college students face

when compared to non-first generation college students while also highlighting the

negative impact that these factors can have on their academic progress.

Alongside the focus on first generation college students, research also underscores achievement-related concerns for youth entering college from low-income families (Gerardi, 2006; Myers, Brow, & Pavel, 2010). Studies report significant disparities in areas including the college enrollment, graduation rates, academic involvement, and performance of low-income students when compared to students in the upper-income quartiles (Kahlenberg, 2004; Mortensen, 2003).

It is important to note here that studies focused on first generation students have also focused on low income youth. The simultaneous investigation of these students is supported by research demonstrating that these populations are not mutually exclusive (Choy, 2001; McCarron & Inkelas, 2006: Warburton, Bugarin, & Nunez, 2001). These studies have noted that youth identified as being low income often identify as first generation students as well. As such, many of the unique challenges that these youths encounter are compounded. For example, because a significant number of first generation college students come from low socioeconomic status (SES) backgrounds (McCarron & Inkelas, 2006), they often struggle with family-related issues (e.g., lack of emotional and instrumental support) in addition to financial concerns. Given that previous researchers have explored these two populations simultaneously (Engle & Tinto, 2008; Filkins & Doyle, 2002) and because there has been significant overlap in the academic challenges of these two populations (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996), the current investigation will focus on first generation and low income students collectively.

Despite the increased challenges that first generation and low income students encounter, steps can be taken to aid in the academic success of these youth. These efforts include involvement in extracurricular activities, positive and supportive peer

interactions, performance and strategy feedback, family support, supportive and affirming college climates, and interactions with supportive faculty (Bandura, 1994; Filkins & Doyle, 2002; Schunk, Pintrich, & Meece, 2008). Notably, these factors have been shown to improve the general achievement outcomes of first generation and low income youth as indicated by gains in critical thinking, analytical skills, effective learning skills, working with others effectively, developing a better sense of self, and developing academic values (Filkins & Doyle, 2002). As evidenced by these specific gains, the utilization of these factors is likely to translate into more positive academic self-beliefs, educational expectations, and performance among this population. Several researchers suggest that programmatic initiatives (e.g., services that provide academic and career advising, graduate and professional school counseling, peer mentoring, tutoring, study skills support, and social activities) are effective in increasing these youths' academic beliefs, expectations, and performance outcomes (Bandura, 1994; Schunk, Pintrich, & Meece, 2008; Tierney, Corwin, & Colyar, 2005).

History of Academic Enrichment Programs

One response to the increased presence of achievement barriers for first generation and low income populations was the implementation of the Higher Education Act. This act was initiated in order to create resources and educational access to programs for these youths and other underrepresented populations (Heller, 2001; Department of Education, 2006). The Higher Education Act was the first legislation noted as having real implications for higher education policy (Heller, 2001). Under this act, TRIO (named after the first three programs, Upward Bound, Talent Search, and Student Support Services) was developed with the goal of providing educational access and programming

for underrepresented youth (e.g., low income and minority students). In 1980, two significant events occurred—1) A request for the adoption of selecting first generation college students to be included in the Act and 2) A push for colleges with TRIO programs to make TRIO a permanent part of their institution's student aid programs. Over the course of these programs, first generation and low income youth began making noticeable academic strides marked by higher rates of high school graduation and college attendance (Barton & Coley, 2011). To date, these programs have demonstrated success in helping low income, first generation, and underrepresented youth excel in the academic domain (Beebe, Burges, Carroll, & Charlens, 2009; Ishiyama & Hopkins 2003; Karcher, Davis III, & Powell, 2002; McKinney, 2010).

Ronald E McNair Post Baccalaureate Achievement Program

The Ronald E. McNair Post Baccalaureate Achievement program (McNair) is one of the programs developed under TRIO with the goal of preparing first generation, low income, and underrepresented students for doctoral studies through involvement in research and other scholarly activities. Scholars in this program demonstrate strong academic potential which is further cultivated within the program. Specifically, McNair works closely with its scholars to ensure successful completion of their undergraduate requirements, encourage enrollment in graduate programs, and track their progress through to the successful completion of advanced degrees with the goal of increasing the attainment of Ph.D.s by students from underrepresented areas of society (Ronal E. McNair Annual Performance Report, 2013).

Limitations of the Literature

Research suggests that academic enrichment programs are beneficial in addressing barriers to first generation and low income college youths' academic success (Hudley, Graham, & Taylor, 2007; Reynolds, Temple, Robertson, & Mann, 2001; Slavin & Madden, 2006). In considering the higher rates of students who discontinue their college education and the increased barriers to academic achievement for this population, it is important that these initiatives are implemented at the college level. In this credential centered society, more employers desire applicants with post-secondary degrees (Wolf, 2003). However, merely encouraging first generation and low income students to attend college will not translate directly to higher graduation rates or lead to the pursuit of a post-secondary degree (Ishitani, 2003; Moreno & Muller, 1999; Nunez, Cuccaro-Alamin, S., Nuñez, & Carroll, 1998). Therefore, it is imperative that colleges ensure these youths can successfully matriculate, graduate, and be competitive for graduate level education. Academic enrichment programs that target first generation and low income college youth are one strategy that has helped address these concerns. In order to facilitate greater achievement-related outcomes, these programs have employed the use of various strategies that have been geared towards addressing the unique requirements of these youth. Needless to say, research exploring how these specific strategies impact students' achievement-related outcomes is important to determine if these academic enrichment programs are effectively meeting the needs of this population.

Unfortunately, two prominent limitations exist in this area of research. First, while studies highlight academic enrichment programs' positive impact on first generation and low incomes youths' performance outcomes (Beebe, Burges, Carroll, & Charlens, 2009;

Brooks, Jones, & Burt, 2013, Ishiyama & Hopkins 2003; McKinney, 2010), little to no research has explored the impact of these programs on non-cognitive related outcomes. Investigations examining the benefits of academic enrichment programs for first generation and low income youth have focused exclusively on performance outcomes, such as grades, retention, and persistence (Beebe, Burges, Carroll, & Charlens, 2009; Brooks, Jones, & Burt, 2013, Ishiyama & Hopkins 2003; McKinney, 2010). Virtually no research exists that explores outcomes such as academic self-concept, self-efficacy, and educational expectations among college youth participating in academic enrichment programs. Scholars suggest that the impact of academic enrichment programs on larger achievement outcomes may be a function of other underlying mechanisms, including academic beliefs and expectations (Eccles & Wigfield, 2002; Donaldson & Graham, 1999). Despite these suggestions, very few studies have explored the effectiveness of academic enrichment programs in fostering other academic-related outcomes such as academic beliefs and expectations. Thus, research demonstrating the effectiveness of these programs across various achievement related-domains is warranted.

Second, there is limited research exploring between-group, within-group, and within person approaches among first generation and low income youth. Because first generation and low income youth have been found to face their own unique challenges to academic achievement (Hahs-Vaugn, 2004; Kahlenberg, 2004; Mortensen, 2003; Prospero & Vohra-Gupta, 2007; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996), exploring how academic enrichment programs strategies impact these youths' academic beliefs and expectations in comparison to youth who do not participate in academic enrichment programs will be important. Additionally, an exploration of variation among

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individual McNair participants is also warranted. This exploration would help to identify effective strategies to support these youths' academic progress.

The Current Study

For first generation and low income students, a number of barriers to academic success have been highlighted (Braxton & Hirschy, 2005; Braxton, Hirschy, & McClendon, 2004; Dennis, Phinney, & Chuateco, 2005; Foreman & Retallick, 2012; Schunk, Pintrich, & Meece, 2008; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996; Tinto, 1998). To reiterate, these youths experience greater family, financial, adjustment, integration, and engagement issues than their traditional college peers. These issues, in turn, have been found to have detrimental effects on their academic beliefs, expectations, and overall academic success (Advisory Committee on Student Financial Assistance, 2001; Terenzini, 1993; Wei & Horn, 2002). Nevertheless, efforts in the form of academic enrichment programs (e.g., TRIO's McNair) have been designed to reduce these barriers by incorporating factors that promote of academic achievement. While theorists have highlighted the positive role of academic enrichment programs on first generation and low income youths' performance outcomes (Tierney, Corwin & Colar, 2005), additional research supporting these suggestions is warranted. Furthermore, there is a dearth of research that has explored the impact of academic enrichment program on non-cognitive related outcomes (e.g., youths' academic self-beliefs and educational expectations). This gap in the research will also be important to investigate.

To address these limitations, the current study outlined three goals. First, in light of the barriers that first generation and low income youth face, this study will follow a risk/ resilience model to explore factors that may be promotive of and/or barriers to the

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achievement-related outcomes of this population. As illustrated in Figure 2.1, these factors include peer support, faculty support, performance and strategy feedback, campus climate, family support, and extra-curricular involvement. Tierney, Corwin, & Colyar's (2005) have suggested that these factors are important to first generation and low income students' achievement-related outcomes. However, it is important to determine whether these factors alone are attributable to youths' outcomes or if beyond these factors, participation in McNair is associated with these youths' outcomes. Therefore, this investigation will focus on exploring how participation in McNair is associated with these youths' academic-related outcomes. Utilizing a control group to explore between-group differences will provide a basis for determining whether youth who participate in academic enrichment programs demonstrate more positive academic-related outcomes than what would be anticipated had they not. Essentially, it is important for programs to provide scholars with the skills, knowledge, and tools to promote more positive achievement outcomes, beyond what they would experience without participation in an academic enrichment program. The last goal of this study focuses on identifying within person differences and will 3) determine if students' participation in McNair impacts their academic performance as indicated by increases in their GPA from pre-McNair to 1 year after McNair participation.

CHAPTER 2

LITERATURE REVIEW

Research devoted to exploring the achievement-related outcomes of first

generation and low income students has provided valuable information to this area of

literature. To date, studies have focused extensively on barriers to achievement that these

youths are more likely to encounter (Blackwell, 2014; Garriott, Flores, & Martens, 2013;

Parks-Yancy, 2012). Research highlighting these barriers and their impact on first

generation and low income youths' achievement outcomes has been important to the

discussion on why academic enrichment programs targeting this population are

necessary. However, beyond the discussion on why these programs are important for first

generation and low income youth, there must be an investigation into if and how

academic enrichment programs influence these youths' outcomes. Accordingly, the goals

of the current sections are to 1) review literature that has explored promotive and/or

barrier factors for first generation and low income youths' academic achievement, 2)

discuss the achievement-specific and achievement-related outcomes likely associated

with these barrier/promotive factors, 3) highlight how academic enrichment programs

may be associated with reducing barriers to and increasing promotive factors for these

youths' academic success, and 4) highlight the guiding theories that frame this

investigation. However first, a conceptualization of the populations under investigation in

this study will be offered.

Conceptualization of First Generation and Low Income Students in the Empirical

Literature

Within this research area, there has been consistency in researchers' operationalization of low income students. Specifically, to be considered low income, a students' parent or guardian must have a taxable income that does not exceed 150 percent of the current poverty level. For example, in 2013, for a student coming from a family of 4, a total annual income of $35,325 would qualify for low income status (U.S. Department of Health and Human Services, 2013). With regard to the definition of first generation students, there has been less consistency. For some researchers, youth whose parents did not receive Bachelor's degrees, regardless of college attendance, were considered first generation college students (Pike & Kuh, 2005; Prospero & Vohra-Gupta, 2007). Among other researchers, youth were only considered first generation college students if their parents had not attended college (Hans-Vaughn, 2004; McCarron & Inkelas, 2006). For the current study, first generation college students were conceptualized as students whose parents did not obtain a bachelor's degree and a low income student was conceptualized as stated in the aforementioned definition.

Promotive and/or Barriers to Academic Achievement for First Generation and Low Income Students

A popular approach in research has focused on developing risk/resiliency models that highlight factors that have the propensity to promote and/or be barriers to youths' academic achievement (Fergus & Zimmerman, 2005; Penrose, 2002; Prelow & Loukas, 2003; Schunk, Pintrich, & Meece, 2008; Tierney, Corwin, & Colyar, 2005; Tinto, 1987). In line with this approach, the current investigation will focus on identifying factors that

may be promotive of and/or barrier to first generation and low income college students'

achievement. Interestingly, a number of studies on first generation and low income

youths' academic achievement have focused on identifying demographic factors that may

be barrier and/or promotive factors (Ishitani, 2003; Thayer, 2000; Terenzini et al., 1996).

Research on demographic factors has provided valuable information that has allowed for

the identification of at-risk/protected populations. However, a goal of this investigation is

to extend this research by identifying contextual factors that may be promotive of and/or

barriers to these students' academic outcomes. Nevertheless, while the current study will

focus on contextual factors, it is important to discuss research that has explored

demographic factors.

<u>Demographic Factors</u>

Economic & Employment Status. Economic and employment status are the two

most discussed demographic factors within research on first generation and low income

students achievement. For these youths, a lack of access to supplemental college

activities and resources, which is often due to limited income and resources, has been

common (Advisory Committee on Student Financial Assistance, 2001). In particular, it

has been demonstrated that first generation and low income students often have less

access to resources, including extracurricular activities (e.g., sporting events, socials, and

enrichment trips), books, and course materials (e.g., I-clickers, lab materials) (Advisory

Committee on Student Financial Assistance, 2001). Some relief for these youths exists in

the form of financial aid and other special loan programs that provide additional income

for such activities and material. Unfortunately, these financial assistances do not

adequately address the needs of this population. In the most optimal instances, youth who

receive assistance from these programs are able cover the cost of books, fees, tuition, and perhaps housing. However, the expenses of daily living and costs to gain access to additional resources, extracurricular activities, and course material often exceed these sources of aid (Engle & Tinto, 2008). For these students, finding ways to afford these basic daily living expenses and additional academic material can be stressful. These stressors are distractions from academic obligations and have the potential to result in achievement-related issues (Paulsen & St. John, 2002).

With the increased need for financial assistance to pay for school, college activities, and supplemental college resources, there has been an increase in low income and first generation students who seek employment and work extended hours while enrolled in school (Hahs-Vaugn, 2004; McMillion, 2005; McCarron & Inkelas, 2006). Moreover, it has been suggested that these extended work hours have created looming issues for these youth. In particular, a study by McMillion (2005) indicated that 44 percent of students were at-risk of leaving school (e.g., low income students, first generation college students, students who delay college enrollment, students who are single parents, and students with GEDs) worked full-time compared to only 12 percent of non-at-risk students. McMillion's (2005) study also revealed that, when compared to students who work less than 15 hours per week, students who work full-time were less likely to attend school full-time (63 percent vs. 22 percent), remain in school for at least three years (77 percent vs. 34 percent), and receive a bachelor's degree (57 percent vs. 8 percent). Unfortunately, for first generation and low income youth, the need for full-time employment often occur as a result of economic and systemic constrains that are often unavoidable, such as covering costs of enrollment or daily living expenses. As a result,

these youths decrease their likelihood of persisting because they often spend less time studying, spend less time interacting with peers and faculty, and take reduced course loads (Pascarella, et. al., 2004). Altogether, these youths' increased likelihood of working greater hours further diminishes their ability to excel academically.

 Other Demographic Factors. In addition to economic and employment concerns, studies have explored how first generation and low income youths' ethnicity is associated with their academic experiences (Ishitani, 2003; Rendon, 1995; Skinner, 1992). Specifically, these studies have indicated that ethnic minority first generation and low income youth often report lower college adjustment and greater obstacles between college entry and degree attainment than their non-ethnic minority first generation and low income peers. Gender differences in the outcomes of first generation and low income youth have also been discussed. In a study by Ishitani (2003), it was found that females had a 57% higher risk of dropping out of college than male students. Finally, research has demonstrated that, when compared to their counterparts, first generation and low income youth enter college with lower high school GPAs (Riehl, 1994). Other research has suggested that these youths' lower high school GPAs may have a strong influence on their college dropout behavior (Ishitani, 2003).

Contextual Factors

 Research has suggested that, beyond these demographic factors, contextual factors play a significant role in the academic outcomes college youth (Tierney, Corwin, & Colyar, 2005; Wigfield & Eccles, 1999). More specific to first generation and low income youth, theorists have highlighted the presence of contextual factors, that when incorporated within academic enrichment programs, may aid in the promotion of more

positive academic outcomes (Tierney, Corwin, & Colyar, 2005). The current

investigation drew from this research and identified 6 factors that were suggested to be

critical to the success of first generation and low income youth, specifically among those

who participate in academic enrichment programs. In line with the suggestions of this

theoretical framework (Tierney, Corwin, & Colyar, 2005), the promotive and/or barrier

effects of 1) peer support, 2) faculty support, 3) performance and strategy feedback, 4)

campus climate, 5) extracurricular activities, and 6) family support will be explored in the

current investigation. This section will review studies that have highlighted the barrier

and/or promotive nature of these factors to first generation and low income youths'

academic success.

Peer support. Peer support groups are often regarded as one of the more plentiful

and affordable resources in helping youth integrate, adjust, and advance in college

(Latino & Unite, 2012). First generation and low income college students often report

relying on other students in their classes in order to form study groups and share

assignments (Richarson & Skinner, 1992). For these youth, peer support systems are a

stronger predictor of academic outcomes than family support (Dennis, Phinney, &

Chuateco, 2005). When compared to faculty, peers are often viewed as less intimidating,

more relatable, and more open to helping (Cuseo, 2010). Studies have also indicated that,

when peer groups are developed within a positive and supportive context, youth are more

likely to demonstrate positive achievement outcomes (i.e., retention and grades) (Schunk,

Pintrich, & Meece, 2008; Chaney, Muraskin, Cahalan, & Goodwin, 1998). This was

illustrated by Chaney and colleagues (1998), who tracked the retention and performance

of 2,800 academic enrichment program students who were of minority status, female, had

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no parental education beyond high school, and who qualified as low income from their first to third year in college. Findings revealed that peer tutoring had the largest effect on participants' persistence and GPAs. This suggests that, for these youth, the pairing of demographically similar students may have encouraged interpersonal bonding that, in turn, had a positive impact on youths' retention and grades. Moreover, it is possible that in one-on-one tutoring settings, these youths were able to benefit from direct assistance while having fewer worries about being left out or behind, as commonly experienced in group settings (Schunk, Pintrich, & Meece, 2008).

Specific to group peer support settings, Schunk and colleagues (2008) indicated that peer models are essential in programmatic efforts because they can serve as coping models. In particular, they posited that when students observe peers with varying levels of ability complete a task, it can be a motivating experience. If youth are able to observe when other peers have difficulties, but still persist and improve, this can become an encouraging practice. Ultimately, this experience can demonstrate to struggling youth that, even in the face of failure, they too can succeed. However, within group peer networks, Schunk and colleagues (2008) mentioned that peer interactions can be a barrier to youths' achievement. Specifically, they suggested that youths' academic beliefs and educational expectations can become damaged if they engage with peers who make them feel less skilled or peer groups that become so competitive that only the brightest students benefit. Within academic enrichment program environments, it is therefore important that peer groups are monitored to ensure that these issues do not occur.

Dennis, Phinney, and Chuateco (2005) explored the impact of peer support on the academic success of 100 ethnic minority first generation college students. Findings

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illustrated that a lack of peer support was a positive predictor of lower academic adjustment and GPA. Even after controlling for students' high school GPA, SES, parents' educational level, and level of motivation, lower reports of peer support were still significantly correlated with lower academic adjustment and GPA. Thus, findings suggest that to promote academic adjustment and performance, institutions should create opportunities where peer support systems can be developed.

In previous research, it has been demonstrated that first generation and low income college youth still have lower academic-related outcomes, even after controlling for characteristics that distinguish them from their peers (i.e., income and parental degree attainment) (Ishitani, 2003; Nunez, Cuccaro-Alamin, S., Nuñez, & Carroll, 1998; Pascarella et. al., 2004; Warburton, Bugarin, & Nunez, 2001). These studies highlighted the need for investigations exploring additional factors that can decrease these youths' susceptibility to negative outcomes. Dennis, Phinney, and Chuateco's research (2005), which illustrates that the promotion of peer support may help these youths avoid lower adjustment and performance issues, has addressed this gap.

Faculty Support. Faculty support has been identified as an important factor in the promotion of positive academic engagement and learning outcomes among college youth (Braxton & Hirschy, 2005; Braxton, Hirschy, & McClendon, 2004; Tinto, 1998). Studies have indicated that minority youth who excel academically, particularly those from first generation and from low income backgrounds, often cite faculty support as a primary reason for their success (Bensimon, 2007). For youth who lack family support, having faculty mentorship can be helpful in a number of areas. Bensimon (2007) suggests that faculty members who have positive interactions with youth, specifically where they hone

in on their academic skills and provide encouragement, validation, and academic assistance, can bolster youths' confidence in their ability to do well academically. Furthermore, faculty can be especially helpful in providing youth with procedural assistance (Deil-Amen, 2011). Procedural assistance includes sharing information about applying for financial aid, accessing academic advisors, preparing for graduate school, and how to ask for help. This form of support is especially helpful to first generation and low income college youth who often do not receive such information from their existing support networks. With respect to youths' academic beliefs and expectations, Deli-Amen (2011) suggests that faculty who provide these forms of support increase youths' confidence in their ability to effectively navigate the college system.

Research also demonstrates that faculty support, in both formal and informal settings, is beneficial to youths' academic-related outcomes (Eby, Rhodes, & Allen, 2007; Hong, Shull, & Haefner, 2011; Micari & Pazos, 2012). Within academic enrichment programs, mentoring has become increasingly important. However, it is difficult to maintain due to the high cost necessary to provide youth with faculty mentors (Gandara & Mejorado, 2005). Nevertheless, students need to receive the assistance necessary to cultivate their academic beliefs, and this partly comes from interactions with faculty. When faculty are supportive of students and have positive meaningful interactions with them, students' academic beliefs, motivation, and academic success are likely to increase (Schunk, Pintrich, & Meece, 2008). Tinto (1993) suggests several factors that impact youths' school persistence. Within this model, Tinto (1993) highlights the importance of both formal and informal faculty and staff interactions as strong determinates of school and social integration. In all, fostering positive faculty

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relationships and interactions among first generation and low income youth is important given the lower rates of persistence and academic adjustment issues that this population encounters.

Performance and Strategy Feedback. Multiple studies have discussed the importance of providing college youth with feedback regarding their academic performance (Bensimon, 2007; Schunk, Pintrich, & Meece, 2008; Tierney, Corwin, & Colyar, 2005). While most of these studies focus on faculty support, research has indicated that academic feedback from multiple sources (i.e., faculty, mentors, peers, family, and employers) was linked to positive academic outcomes (i.e., academic self-concept) (Shea & Bidjerano, 2010). Additional research exploring the impact of performance and strategy feedback outside of the faculty support context is therefore warranted.

Scholars argue that providing performance and strategy feedback to youth is essential to their academic growth (Schunk, Pintrich, & Meece, 2008). Providing students with feedback on their performance, specifically highlighting areas for improvement and strategies to achieve suggested improvements, may help to increase their academic beliefs and educational expectations. For example, if a student incorporates feedback from a teacher who suggests they review study material before test and subsequently perform better on exams, they may learn their outcomes are not due to lack of ability, but are within their control. When students are given informational strategies and techniques to help improve learning, they also are more likely to learn that these skills can be transferred to other activities, and students can thereby increase their self-efficacy (Schunk, Pintrich, & Meece, 2008).

*Extracurricular Activity Involvement. S*tudies frequently discuss the link between students' involvement in extracurricular activities (e.g., group discussions about post-baccalaureate plans, attending lectures from guest speakers, and group cultural activities) and positive academic-related outcomes (e.g., higher grades, adjustment, retention, and persistence) (Foreman & Retallick, 2012; Tierney, Corwin, & Colyar, 2005; Tinto, 1993; Tomlinson-Clarke & Clarke, 1994). In particular, these researchers suggest that involvement in these activities may help youth to integrate in and adjust to their college environment. This was supported by research that explored the association between extracurricular involvement and academic adjustment among 47 students who received precollege preparation and 45 who did not (Tomlinson-Clarke & Clarke, 1994). Results indicated that for students who had college preparation in high school, the number of extracurricular activities they were involved in was the best predictor of social adjustment; however, for those students who did not have college preparation in high school, the level of involvement in extracurricular activities was the best predictor of social adjustment. Findings from this study are particularly relevant to first generation and low income students who often enter college less prepared than their counterparts. Results illustrate that, in addition to attending extracurricular events, these youths must also be engaged in extracurricular activities to reap the most reward.

In a study by Pascarella and colleagues (2004), which included 3,331 students from 18 institutions participating in the National Study of Student learning (NSSL), it was found that first generation college students had lower levels of extracurricular involvement and interactions with peers in non-course contexts. Pascarella and colleagues (2004) linked this finding to first generation students being more likely to

work-full time and live off campus. Other research has illustrated that first generation and low income youth often do not have the same access to academic resources offered in college when compared to their peers (Terenzini, Cabrera, & Bernal, 2001). Terenzini and colleagues (2001) highlighted this in a study with 4,000 low income college youth who participated in the 1992 survey for the National Study of Students' Learning. Findings noted that low income students had lower reports of outside class involvement than students' from higher incomes. Unfortunately, because data was obtained from a secondary source, researchers were unable to determine why these youths reported lower levels of campus involvement. Determining the source of these students' lower involvement would be important to identify ways to help increase engagement for these youth. Unfortunately, less extracurricular involvement among first generation and low income college students can impair their ability to develop meaningful social relationships and networking opportunities that can be of assistance to them in their academic and career endeavors.

Tinto (1993) also suggested that extracurricular activity involvement can positively impact students' intentions, goals, college commitments, and outside college commitments. This impact, in turn, may affect youths' decision to stay in or leave college. First generation and low income college youth who are less engaged on college campuses have been found to be at a greater risk of academic difficulties in postsecondary education (Engle & Tinto, 2008). Engle and Tinto (2008) indicated that, for first generation and low income college youth, it is imperative that these students are encouraged to integrate into the college domain. They further propose that, for these youth, greater academic integration will contribute to higher grade point averages. Other

research discussing the importance of these activities has argued that they further enhance curriculum by creating social opportunities that encourage first generation and low income youth to stay involved in the college process and avoid dropping out (Terenzini, et al., 1996).

Family Support. For first generation and low income college students, challenges navigating family dynamics have been identified as a unique barrier to achievement (McConnell, 2000; Tinto, 1993). In particular, emotional support (e.g., validation of students' college experiences, encouragement during mid-terms and finals, etc.) from families has been cited as a common achievement barrier that non-first generation and non-low income college students have been less likely encounter (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996; Tinto, 1993). Terenzini and colleagues (1996) highlighted this barrier in a study comparing the experiences of 825 first-generation and 1860 non-first generation college students across 23 diverse institutions. Findings indicated that first generation college students reported less perceived family support than their non-first generation peers. Additionally, it was found that when compared to non-first generation college students, first generation students were more likely to perceive a lower level of importance placed on college by their parents. These researchers, as well as other scholars (Garcia, 2015; Vargas, 2004), suggest that parents of first generation college student often lack the experiences and social capital often helpful in providing a supportive culture for college students. Parents' deficits in these areas may lend to less confidence in their ability to provide emotional support for their college students (Vargas, 2004) and may subsequently result in these youths' perceived lack of parental/ familial support.

For youth who lack emotional support from their families during their college matriculation, living away from home can be an extremely painful and isolating experience (McConnell, 2000; Nora & Cabrera, 1996: Tinto, 1993). This experience can become even more unbearable when youth are ostracized by their family for leaving home to pursue higher education (Tinto, 1993). For these students, having to resolve conflicts between family, new roles, and demands placed onto them from the college setting can create excessive stress and subsequently impact achievement (McConnell, 2000).

In addition to concerns related to the lack of emotional support experienced by these youth, first generation and low income youth are also less likely to receive instrumental support from their families (Garcia, 2015; Ting, 2003). Instrumental support, which refers to tangible assistance provided by others, has even been highlighted as a barrier to first generation college students whose parents have provided them with emotional support (Dennis, Phinney, & Chuateco, 2005). Ting (2003) noted that even when parents are aware of the importance of higher education, they are often unable to help their children become familiar with the college process in order to ease their transition to college. Specifically, parents of these youths often lack the first-hand knowledge necessary to prepare their children for college experiences and various obstacles they may face (Brooks- Terry, 1988; Terenzini, et al., 1996; Zalaquett, 1999). Often, these parents are unable to transmit information about campus values, access to human and financial resources, or the general functioning of a higher education setting (McConnell, 2000; McDonough, 1997). Since these parents are typically unable to assist

their children in ways parents of non-first generation college students can, these youths often enter college with disadvantages not experienced by their counterparts.

Campus Climate

While research focused on first generation and low income college students' perceptions of campus climate has been limited, studies have suggested that a big contributing factors to the academic achievement of this population is their perceptions of campus climate (Gloria, Hird, & Navarro, 2001; Gloria & Ho, 2003). Researchers have found that students' perceptions of campus climate are associated with their academic achievement outcomes (Farley, 2002; Gloria & Ho, 2003; Parker, 1998). It has further been suggested that perceptions of the college campus are significantly lower among first generation and low income college youth (Billson & Terry, 1982; Weidman, 1984; Pascarella, et al., 2004). Studies have associated this finding with these youths' experiences of less social and academic integration than their non-first generation and low income college peers (Inman & Mayes, 1999; Ishitani, 2003; McConnell, 2000). Further, for these youths, external factors such as ties to home communities and perceived isolation by other students has been found to impact their integration into the college campus and perceptions of the campus climate (Billson & Terry, 1982; Weidman, 1984).

While most research on campus climate has discussed this factor within the lens of campus "racial" climate, the implications of these studies are nevertheless important to consider. It has been generally suggested that the low rates of academic achievement among minority (e.g., first generation and low income youth) students is associated with a negative perception of campus climate (Gloria & Ho, 2003). Research has suggests that

students who have poor perceptions of their campus climate may disidentify with their institutions and in turn experience a removal of academic self-concept from their general self-concept (Steele, 1992, 1997). In turn, this appears to be negatively associated with their achievement in the academic domain. Given that few studies have been devoted to understanding how institutional climate variables impact first generation and low income college students and conversely how these youths view their campus climate (Terenzini et. al., 1996), it is vital that research explores this area and understands how universities might better respond to the unique needs of first generation and low income students.

Effects of Barriers on First Generation and Low Income Students' Outcomes

The presence of these compounded factors alone highlights the complex challenges that these youths have higher probabilities of encountering. Further, this research has highlighted a duality amongst several of these factors, such that they can either promote more positive academic outcomes among these youths or be barriers to their achievement. In instances where these factors present as barriers, researchers have expressed significant concerns (Engle & Tinto, 2008; Pascarella, et. al., 2004; Paulsen & St. John, 2002; Terenzini, et. al., 1996; Tinto, 1993). Specifically, researchers have suggested that the effects of these barriers likely impact various achievement outcomes (Brooks-Terry, 1988; Kahlenberg, 2004; Pascarella, Pierson, Prospero, & Vohra-Gupta, 2007; Eccles & Wigfield, 2002; Wolniak & Terenzini, 2004). These studies have largely demonstrated that, when compared to traditional college youth, first generation and low income college youth have lower rates of academic persistence/matriculation, graduation rates, and GPA (Department of Education, 2004; Nunez, Cuccaro-Alamin, S., Nuñez, & Carroll, 1998); Pascarella, Pierson, Wolniak, & Terenzini, 2004; Ting, 2003). Even prior

to entering college, first generation and low income college youth have been found to be less academically prepared for college than their counterparts (Kuh, 2007; Mortenson, 2001; Wei & Horn, 2002). In particular, Wei & Horn's (2002) research revealed that the SAT scores, as presented in the dated SAT scoring metric, of low-income students were on average two hundred points behind those of high-income students. More specifically, those in the lowest economic income quartiles scored 400-700 on the SAT when compared to the middle income quartiles scores of 710-1020 and the upper income quartile scores of 1030-1600 (Wei & Horn, 2002). Pascarella and colleagues (2004) also found differences in the achievement of first generation and non-first generation students. Findings indicated that first generation students had significantly lower cumulative grade point averages in their third year of college than non-first generation students. Moreover, this study highlighted that lower cumulative grade point averages were apparent despite the fact the first generation students had lighter academic loads than their non-first generation peers. Pascarella and colleagues (2004) noted higher rates of being employed among first generation students and highlighted that, even with lighter course loads, the added responsibility of employment was disadvantageous to these youths' academic achievement.

While performance based outcomes have been a primary area of focus in literature on first generation and low income college students' achievement, scholars suggest that non-cognitive specific outcomes are also impacted by barriers to achievement that these youths face (Phinney & Haas, 2003: Wigfield & Eccles, 2000). In particular, research has demonstrated that first generation and low income college youth are more likely to report lower academic self-beliefs and educational expectations than

their non-first generation college peers (Hellman, 1996; Vuong, Brown-Welty, & Tracz, 2010). Scholars have also asserted that barriers specific to first generation and low income college students (e.g., lack of family support and college preparedness) are all too commonly associated with non-cognitive related outcomes such as lower academic competence, self-efficacy, motivation, academic goals, and struggles with establishing an identity connected to academics (Choi, 2005; Flanagan, 1991; Prospero & Vohra-Gupta, 2007). In particular, Pascarella and colleagues (2004) found that, when compared to non-first generation college students, first generation college students had significantly lower degree plans. Specifically, from their first to third year in college, first generation college students demonstrated significantly lower increases in their degree expectations. These findings were linked to differences in the cultural capital (i.e. the educational, social, and cultural advantages that individuals from the upper middle classes are believed to possess) these youths bring to college and also the potential influence of parents with higher education degrees. In all, the multifaceted barriers and obstacles these youths face have implications beyond their grades, persistence, and retention. Studies exploring outcomes beyond performance based outcomes will be important in expanding the breadth of this literature.

Academic Achievement: Academic Beliefs and Expectations

A large body of research has been devoted to examining the academic persistence/ matriculation, graduation rates, and GPA of first generation and low income college students. Academic enrichment programs have also primarily utilized these factors as measures of their programs effectiveness. While valuable information has been gleamed from exploring these factors, research examining other achievement-related outcomes is

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warranted. Currently, there is a dearth of research that has explored non-cognitive achievement factors among first generation and low income college students. Drawing from achievement theories (Wigfield & Eccles, 2000), academic-self beliefs and expectations have been two factors predictive of academic achievement. Interestingly, research has also reported differences in the academic self-beliefs and expectations of first generation and low income college youths and their counterparts such that, non-first generation and low income students report higher beliefs and expectations (Hellman, 1996; Vuong, Brown-Welty, & Tracz, 2010). The current paper will now review research on academic beliefs (i.e., academic self-efficacy and academic self-concept) and educational expectations in order to provide rationale for the use of these achievement-related variables as outcomes in the current investigation.

Academic Self-Efficacy

Self-efficacy has been widely studied in terms of its influence on academic achievement (Bong & Clark 1999; Chemers, Hu, & Garcia, 2001; Choi, 2005; Elias & MacDonald, 2007; Linnenbrink & Pintrich, 2003; Pajares, 1996; Schunk, 1991). Definitions of academic self-efficacy have varied slightly, however most have referred to it as an individual's belief that they can successfully perform given academic tasks at a designated level (Schunk, 1991; Bandura, et al., 2003). The construct typically determines whether or not an assigned task is attempted, and can often account for the amount of effort one exerts on a task (Bandura & Adams, 1977). In addition to one's effort, Schunk and colleagues (2008) also indicated that a student's self-efficacy has a significant impact on the activities they choose and their academic persistence. Academic self-efficacy is suggested to influence individual feelings, thoughts, level of motivation,

and behaviors (Bandura, 1994; Bandura & Schunk, 1981). Further, Bandura and colleagues (2003) consider it to be a strong determinant of whether an individual can effectively meet the demands of his/her academic environment.

Increasing students' self-efficacy can positively impact students' academic outcomes (Majer, 2009; Schunk, Pintrich, & Meece, 2008; Zimmerman, Bandura, & Martinez-Pons, 1992). As highlighted by Bandura (1997), effective ways for academic enrichment programs to facilitate greater self-efficacy beliefs include building youths' performance mastery, providing vicarious experiences through modeling, and providing verbal rewards and encouragement. The effectiveness of these strategies is further highlighted by theoretical models created to aid in the development of academic enrichment programs. Specifically, theorists have highlighted the benefits of fostering peer support, faculty support, performance and strategy feedback, family support, campus climate, and extracurricular activity involvement (Tierney, Corwin, & Colyar, 2005).

Scholars also suggest that students with higher self-efficacy are more likely to work harder, be more committed to tasks, have better learning strategies, and cope with stress better than peers with lower reports of academic self-efficacy (Parajes, 2002; Zimmerman, 2002). It is also suggested that youth who possess the aforementioned academic-related traits will be better able to persist in college and produce more positive achievement-related outcomes (Lichtinger & Kaplan, 2011). Even among diverse samples, several studies support these assertions by demonstrating that academic self-efficacy is robustly correlated with student academic adjustment, performance, and achievement (Bandura, 1997; Brady-Amoon & Fuertes, 2011; Caraway, Tucker, Rienke, & Hall 2003; Chemers, Hu, & Garcia, 2001; Hackett, & Betz, 1981; Lent, Brown, &

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Hackett, 2000; Multon, Brown, & Lent, 1991). For example, Caraway, Tucker, Rienke, and Hall (2003) found among a sample of 123 ethnically diverse high school students, that self-efficacy was negatively associated with fear of academic failure. For first generation and low income youth, the ability to avoid fear of failure is critical, especially in light of research suggesting that these students are more likely than their peers to drop out of college and have lower GPAs (Ting, 2003). The implications of this study highlight the importance of programmatic efforts that incorporate strategies that facilitate positive self-efficacy and reduce fear of failure.

Academic Self-Concept

Academic self-concept is another factor suggested to impact first generation and low income college students' academic achievement (Penrose, 2002). Academic self-concept broadly reflects an individual's knowledge of and perceptions about themselves in achievement situations (Byrne, 1984; Shavelson & Bolus, 1982; Wigfield & Karpathian, 1991). More specifically, it has been defined as the attitudes, beliefs, and perceptions of one's academic skill set and performance (Lent, Brown, & Gore, 1997). Moreover, it consists of a comparative element that captures students' beliefs about their abilities as an individual and in comparison to other students (Cokley, 2000; Marsh, 2002; Schunk, et al., 2008). Academic self-concept is critical in determining how an individual creates a general understanding of their academic abilities (Shavelson, Hubner, & Stanton, 1976). Interestingly, in research exploring academic beliefs, questions have been raised as to whether academic self-concept and academic self-efficacy are the same construct (Bong & Skaalvik, 2003; Skaalvik & Rankin, 1996). However, it has been demonstrated that they are both conceptually and empirically different constructs (Bong

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& Shaalvik 2003; Ferla, Valcke, & Cali, 2009). As opposed to self-efficacy, which centers on one's confidence or perceived ability to complete a task, self-concept focuses on how an individual feels about an academic task (Pajares & Schunk, 2001).

Researchers posit that academic self-concept is strongly associated with educational outcomes (e.g., GPA and retention) (Cokley & Chapman, 2008; Schwarts & Washington, 2002). When compared with other non-cognitive variables, academic self-concept has been found to be one of the best predictors of academic performance (Cokley, 2002; Gerardi, 1990, 2005; Witherspoon, Speight, & Thomas, 1997). Moreover, Gerardi (1990) found academic self-concept to be more predictive of GPA than other cognitive variables including college skills assessment examinations and high school GPA. Findings from Gerardi's (1990) study support other research suggesting that a focus on non-cognitive factors, such as academic self-beliefs, is a more optimal determinant of achievement for minority students (i.e., African American, first generation, and low income youth) (Cokley, 2000; Tracey & Sedlacek, 1982). Individuals who are successful in the academic domain are suggested to be more likely to adopt academics as a core part of their self-concept (Fordham, 1988; Fordham & Ogbu, 1986; Osburne, 1997; Osbourne, Walker, & Rausch, 2002; Steele, 1997). That said, individuals whose academic performance is not a central part of their self-concept may be at a higher risk for academic difficulties. This assumption has been supported by motivational theories asserting that a high academic self-concept is associated with greater academic persistence in the face of failure and greater effort demonstrated in the face of difficulties (Bandura, 1997; Marsh, Tratwein, Ludtke, Koller, & Baumert, 2005).

Among first generation and low income college students, few studies have explored associations between academic self-concept and achievement-related outcomes. This is particularly surprising considering that this construct has been found to be predictive of academic achievement for youth (Marsh, Tratwein, Ludtke, Koller, & Baumert, 2005). Current, research that has focused on the academic beliefs of this population has been geared extensively towards the examination of general and academic self-efficacy. As highlighted in previous research (Pajares & Schunk, 2001), the examination of academic self-efficacy solely taps into ones' belief about whether or not one possesses the capabilities to complete a task. However, examination of this academic belief alone fails to account for 1) how students feel about the tasks they engage in and 2) how they feel their engagement in a task compares to their peers. For first generation and low income youth, addressing these two points are important. According to Bandura (1994), students who believe they will excel academically will be more motivated to do so. Furthermore, according to Cokley (2000, 2002), identification of how students feel about their current academic abilities, as well as how they feel about their current abilities compared to their classmates, provides a strong context for which to understand achievement outcomes. For youth with academic difficulties, uncovering ways to promote and/ or protect academic self-concept is paramount. This is even more important in settings where first generation and low income students' peers demonstrate less desirable achievement outcomes.

Educational Expectations

Educational expectations have been found to be closely associated with students' achievement outcomes (Sewell & Hauser, 1980, Quian & Blair, 1999). They are

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considered to have a direct and mediating effect on youths' academic achievement (Buchmann & Dalton, 2002; Eccles & Wigfield, 2002). Broadly speaking, educational expectations refer to students' expectancies about the future results of their behavior (Bandura, 1984; Lent, Brown, & Hackett, 1994). For youth who feel that their efforts will not produce desired outcomes (e.g., graduation, good grades), research suggests they will be less likely to attempt or achieve their goals (Bandura, 1984). It has also been posited that youth who are more likely to experience negative outcomes due to ethnicity or socioeconomic discrimination are at an even greater risk of experiencing more negative educational expectations (Lent, Brown, & Hackett, 1994). Educational expectations also predict academic performance beyond the role of self-efficacy (Siegel, Galassi, & Ware, 1985). This particular finding demonstrates the benefits of the current investigations exploration of educational expectations in addition to youths' academic self-efficacy.

With regard to first generation and low income college students' educational expectations, few studies have explored this relationship. The lack of research on college students, specifically first generation and low income youth is concerning given studies demonstrating that youths' educational expectations are strong predictors of their academic outcomes (Wigfield & Eccles, 2000; Bandura, 1997). Nevertheless, studies have found that first generation and low income students demonstrate lower educational aspirations than their non-first generation and higher income peers (Pratt & Skaggs, 1989; Terenzini, Springer, Yeager, Pascarella, & Nora, 1996). While dated research has proposed that these youths enter college with similar expectations to non-first generation and higher income peers (Billson & Terry, 1982), recent studies conclude that first generation and low income students often enter college with lower degree expectations

(Nunez, Cuccaro-Alamin, S., Nuñez, & Carroll, 1998; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Even after controlling for characteristics distinguishing first generation and low income students from their peers (i.e., income and parental degree attainment), these youths still demonstrate lower educational expectations, persistence, and degree attainment in college (Ishitani, 2003; Nunez & Cuccaro- Alamin, 1998; Pascarella et al., 2004; Warburton, Bugarin, & Nunez, 2001). This suggests that income and parental degree status alone are not fully responsible for the difficulties and lower expectations these youths reported. It further highlights the presence of other important factors to uncover that may help these students decrease their susceptibility to experiencing greater academic difficulties.

Wigfield & Eccles' (2000) Expectancy Value Theory suggests that students' expectancy beliefs have a direct impact on their achievement outcomes. Specifically, they proposed students who report greater educational expectations will be more likely to persist, finish college, and also pursue graduate level education than youth who do not hold these expectations. It is therefore suggested that uncovering ways to foster more positive educational expectations among first generation and low income college youth may have significant implications for the promotion of academic achievement among first generation and low income students. Despite a strong basis for such an examination, the lack of research in this area highlights the need for further investigations exploring first generation and low income youths' educational expectations as an achievement outcome.

The Role of Academic Enrichment Programs: The McNair Scholars Program

To address the unique barriers that first generation and low income youth encounter, academic enrichment programs (AEPs) have been implemented. In order for AEPs to address barrier to achievement and facilitate greater achievement specific (e.g., higher GPA, retention, and matriculation) and related (e.g., academic beliefs and educational expectations) outcomes, the use of empirically supported strategies has been optimal. With respect to the McNair Scholars Program, 1) completion of research and other scholarly activities, 2) summer internships, 3) seminars, 4) tutoring, 5) academic counseling, 6) peer and faculty mentoring, 7) improving financial literacy, 8) and exposure to cultural events and activities have all been used to aid in the success of first generation and low income students. The implementation of these programmatic elements has been supported by previous research suggesting that peer relationships, performance and strategy feedback, faculty interactions/support, family support, campus climate, and extracurricular activities are necessary to help first generation and low income youth excel academically (Tierney, Corwin, & Colyar, 2005). This research also has suggested that, beyond these factors, the role of participation in academic enrichment programs for these students is critical. Tierney, Corwin, and Colyar, (2005) specifically noted that, when incorporated into AEPs, peer support, performance and strategy feedback, faculty interactions/ support, family support, campus climate, and extracurricular activity involvement will translate into more positive academic outcomes for first generation and low income youth.

Overall, the efficacy of McNair and similar academic enrichment programs has been illustrated by studies linking participation in these initiatives to youths' academic

gains (e.g., higher GPAs, persistence rates, and graduation rates) (Brooks, Jones, & Burt, 2013; King, Vidourek, Davis, & McClellan, 2002; Stake & Mares, 2001). Scholars suggest that academic enrichment programs provide students with the knowledge, tools, and resources necessary to not only graduate from college, but also be competitive in pursuing post-baccalaureate education (Moreno & Muller, 1999). Even at the post-baccalaureate level, studies indicate higher rates of degree completion, transition into tenure-track faculty positions, and post-doctoral positions among academic enrichment program scholars (Girves, Zepeda, & Gwathmey, 2005). Given first generation and low income students' exposure to achievement barriers, continued implementation and evaluation of academic enrichment programs targeting these youths is a necessary endeavor. More specifically, research highlighting the important role that AEPs, like McNair, play in promoting positive academic outcomes and helping these youths navigate barriers to their academic success is warranted.

Theoretical Frameworks

Risk and Resilience Models

The theoretical underpinnings for the current investigation were derived from two theoretical models. The foundation for the current investigation was built on a risk and resilience theoretical framework. Thus, the focus of this study was not on how or why first generation and low income youth have lower academic performance than their non-first generation and low income peers, but rather a focus on within-group differences to understand how recommended promotive and/or barrier factors may be associated with achievement-related outcomes for first generation and low income youth. Further, this investigation seeks to understand how participation in McNair may be associated with the

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facilitation of resiliency among first generation and low income youth. To explore this, a between-group approach will be used to assess for differences among McNair and non-McNair participants as well as a within person approach to assess for academic gains among McNair participants.

In this framework, risk refers to the potential for negative outcomes in the near or distant future (Luthar & Cicchetti, 2000). Risks can be conceptualized as stressors that place physical or psychological demands on an individual that typically are not present in everyday life (Garnezy, 1981). With respect to first generation and low income college youth, college transition experiences alone may create significant risks for these youths and some may have difficulties navigating these risks. While risks can be acute in nature (e.g., navigating the financial aid office), others have been identified as more chronic (e.g., financial barriers) (Luthar & Cicchetti, 2000). Nevertheless, these risks can create looming academic-related issues for these youth.

The term resilience in this framework has referred to positive adjustment and competent functioning in the face of adversity (Luthar & Cicchetti, 2000). It specifically highlights at-risk youths' ability to experience adaptive function despite greater exposure to barriers (Rutter, 1999). In this framework it is highlighted that, youth who demonstrate positive outcomes despite risk exposure are not devoid of their stressors (Rutter, 2007). Instead, it is posited that these youths learn resilience through successful recovery from stressful experiences. For first generation and low income youth, it becomes clear that institutions may not be able to ameliorate individual vulnerability to barriers or make these youths completely invulnerable to risks. However, the risk and resiliency

framework would suggest that supports, like McNair, can be put in place to help these youths navigate barriers and/or recover from stressors.

Altogether, this risk and resilience model illustrates the presence of factors that may increase and/or decrease the likelihood of negative outcomes that may occur in the face of adversity. Furthermore, this model shows why participation in the McNair program is important for first generation and low income youth. That is, beyond achievement barrier and/or promotive factors for first generation students, McNair offers a supportive platform for at-risk youth to build resilience by facilitating their successful recovery from stressors.

Expectancy Value Theory

Wigfield and Eccles' (2002) Expectancy Value Theory (EVT) provides rationale for the exploration of academic beliefs and expectations as outcomes in the current investigation. The EVT theory suggests that youths' academic beliefs and expectations contribute to their academic achievement. For youth with less positive achievement-related outcomes, it has been suggested that academic beliefs and expectations are important areas to foster (Wigfield & Eccles, 2002). While the overall model of this theory consists of several components, the current research draws from two particular components, namely expectations for success and general self-schemata.

Eccles & Wigfield (2002) have referred to expectancies for success as beliefs about how well one will do on upcoming tasks, either in the immediate future or long-term. In comparison to other components in the model (e.g., ability beliefs), expectations for success are assumed to directly influence achievement choices, performance, effort, and persistence. The direct link proposed in this model illustrates the proximity between

the expectations youth hold about upcoming educational outcomes and outcomes they actually attain. Additionally, this link has demonstrated why expectancy beliefs are an important component to foster within academic enrichment programs targeting first generation and low income youth. As suggested by this theory, promoting more positive educational expectations may result in greater achievement-related performance, persistence, and choices, all areas that first generation and low income youth have been found to encounter difficulties.

Under the general self-schemata section, Eccles & Wigfield (2002) discussed the application of task specific beliefs (e.g., ability beliefs) to achievement-related choices and outcomes. Ability beliefs were defined as the perception of one's current competence on a given activity. While not posited to directly impact achievement choices and performance, this theory suggested that academic beliefs indirectly impact youths' achievement-related outcomes through their expectancies for success. In other words, students having more positive academic-related beliefs are suggested to have greater expectancies for success and, thus, more positive achievement choices, performance, persistence, and effort.

While academic ability and expectancy beliefs have been found to share similar components, they are distinguished conceptually (Eccles & Wigfield, 1995; Eccles et al., 1993). Eccles and Wigfield (1995) stated that academic ability beliefs reflect present ability, whereas expectancy beliefs are focused on the future. However, both beliefs are critical to understand youths' achievement-related performance and choices (Eccles & Wigfield, 2002). In light of studies that have shown first generation and low income college youth to demonstrate lower academic performance, graduation rates, and post

graduate attendance than their counterparts (Hahs-Vaugn, 2004; Prospero & Vohra-Gupta, 2007), it may be important to foster both current perceptions of ability and future expectations to address these issues. As highlighted in previous research, youth who demonstrate greater confidence in their ability to be successful in college and have higher expectations for educational success show a greater propensity to excel academically (Wigfield & Eccles, 2000; Tracey & Sedlacek, 1982). This theory provides the rationale for exploring the academic beliefs and expectations of first generation and low income college students. Further the proposed benefits of creating academic enrichment programs that foster more positive academic self-perceptions and educational expectations also creates the need for evaluations of academic enrichment programs ability to foster these beliefs and expectations.

Research Questions

Studies have indicated that first generation and low income youth are more likely to encounter barriers to academic achievement and are more susceptible to experiencing less positive academic beliefs and educational expectations (Hellman, 1996; Pascarella, et al., 2003; Vuong, Brown-Welty, & Tracz, 2010). Theorists have made efforts to address these concerns through the discussion of factors suggested to promote more positive academic outcomes among these youths (Eccles & Wigfield, 2002; Tierney, el. al., 2005). Moreover, programs like McNair have been designed to address these barriers and harness factors that have been found to promote achievement. However, while it has been suggested that these factors may promote positive academic-related outcomes, it is important to note that some factors are still considered barriers to first generation and low income students' achievement-related outcomes (e.g., peer support).

Drawing from the larger theoretical literature, the current investigation explores factors that may be barriers to and/or promotive of positive academic beliefs and expectations among first generation and low income college students. Because academic enrichment programs have been touted as effective interventions in helping these youths navigate potential barriers to academic success (Beebe, Burges, Carroll, & Charlens, 2009; Ishiyama & Hopkins 2003; Karcher, Davis III, & Powell, 2002; McKinney, 2010), this study will explore whether participation in McNair is associated with these youths' outcomes beyond the role of barrier/promotive factors. The current investigation will then explore how McNair participation is related to first generation and low income youths' academic beliefs and expectations by exploring differences between these outcomes for McNair and non-McNair participants. Last, this study will examine whether students who participate in McNair demonstrate higher academic performance after participation in the program. The following hypotheses have been outlined for the research questions of this study.

RQ1: What factors are barriers to or promote achievement among first generation and low income college students?

      H1: It is hypothesized that peer support, faculty support, family support, performance and strategy feedback, campus climate, and extracurricular activities will relate positively to academic self-concept, academic self-esteem, and educational expectation among first generation and low income college students.

RQ2: Does McNair participation, over and beyond promotive/barrier factors, predict college students' academic outcomes?

H1: It is anticipated that McNair participation will account for unique variance in students' academic beliefs and education expectation after controlling for peer support, faculty support, family support, performance and strategy feedback, campus climate, and extracurricular activity involvement.

RQ3: Does participation in the McNair program influence college students' academic outcomes?

H4: It is anticipated that McNair scholars will demonstrate a significant increase in GPA after participating in the program.
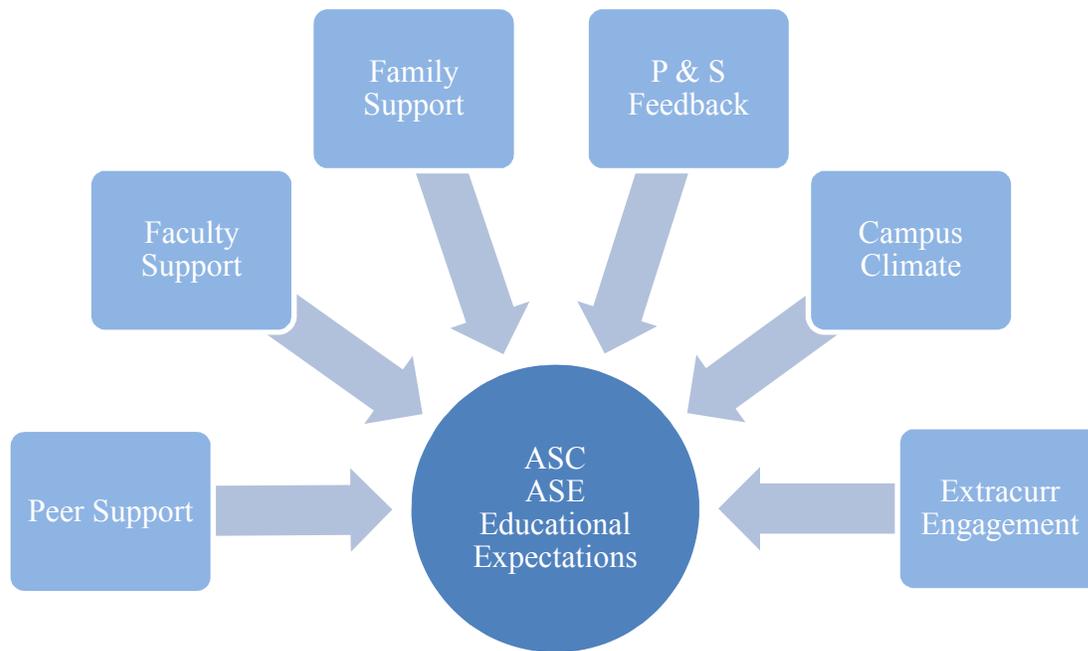
Figure 2.1

Figure 2.1 Conceptual model of the association between predictor and outcome
     variables

CHAPTER 3

METHOD

The purpose of the current investigation was to identify factors that promote positive academic-related outcomes among first generation and low income college youth. This study focused on highlighting the potential benefits of academic enrichment program participation for this population of students. Between-group differences in McNair and non-McNair participants' academic beliefs and expectations were explored in addition to the impact of participation in McNair on grade point average. The current chapter discusses the methods used to address the research goals of this study. Information about the participants, recruitment procedures, study procedures, measures, and the proposed data analysis plan will be discussed.

Participants

Participants consisted of approximately 110 first generation and low income youth, ages 18-23, from two Universities in the Southeastern region of the United States. As previously discussed, definitions of first generation status has varied across studies (Pike & Kun, 2005; Hans-Vaughn, 2004). However, for the current study, first generation status was designated for college students whose parents did not obtain a bachelor's degree. This definition was utilized in order to maintain consistency with the McNair Scholars Programs definition of a first generation college student.

Among studies that have focused on low income youth, there has been more consistency in definitions. Studies have generally considered a student to be low income when their family's taxable income did not exceed 150% of the poverty level identified for a respective year (U.S. Department of Health and Human Services, 2013).

The first university setting was a large, Predominantly White Institution (PWI) with approximately 44,000 students. Seventy-seven percent of the population identified as White, 17.1% as African American, 3.5% as Hispanic, and 2.4% identified as Asian and/or Pacific Islander. Of these students, approximately 55% were female and 45% were males. Eighty-four percent were full-time students and 6% were part-time. Of the total undergraduate population, approximately 85% of students received financial aid. The second university setting was a smaller PWI liberal arts college with approximately 6,000 enrolled students. Of those students, approximately 60% identified as White, 30% as African American, 2% as Hispanic/ Latino, and 17% as Asian and/ or Pacific Islander. Sixty-seven percent were female and 33% were male. At this university, approximately 92% of undergraduate received some form of financial assistance.

McNair Scholars Program Description

The United States Department of education implemented the Federal TRIO Programs, named for its first three programs (Upward Bound, Talent Search, Student Support Services), in 1965. TRIO was initiated in response to a need for resources and educational programs for underrepresented youth, including first generation, low income students, and ethnic minorities (Heller, 2001; Department of Education, 2006). The objective of TRIO was to offer Federal outreach and student services programs to help low-income individuals, first-generation college students, and individuals with

disabilities advance through the academic pipeline from middle school to post baccalaureate. One of the 8 TRIO programs includes the Ronald E. McNair Post Baccalaureate Achievement program. This program, which first started in 1989 with 14 institutions, is now funded at 151 institutions across the United States and Puerto Rico by the U.S. Department of Education (Ishiyama & Hopkins 2003).

The overarching goal of the Ronald E. McNair Post Baccalaureate program is to help TRIO eligible undergraduates to prepare for and pursue graduate degrees. Across all McNair Scholars Programs, scholars enter the program during the spring semester of their Junior year. During this time, they participate in a program orientation and are matched with a faculty research mentor. Also, students participate in a six-week summer research experience that includes multiple components: 1) completion of the scholars' research project(s); 2) enrollment in a three-hour research oriented course; 3) a summer orientation course; 4) advice and guidance on applying to graduate programs; 5) support activities (e.g., GRE preparation and workshops); and 6) seminars that help students prepare to succeed in graduate school. Each week, scholars meet with their research faculty mentors for guidance and feedback on their research.

By the end of the summer, students are expected to have committed a minimum of 100 hours to their research. During the following academic year, junior year students are expected to continue their research experiences with faculty mentors and begin identifying graduate programs they wish to attend, and identify and apply to at least five summer research or internship programs. For senior scholars, activities focus primarily on preparing graduate school application materials through enrollment in a one credit hour online course and with guidance from the McNair coordinator and program faculty.

In sum, the McNair Scholars program offers various opportunities to its participants (e.g., opportunities to publish research in professional and academic journals, and opportunities to present research findings at conferences).

Recruitment Procedures

Three strategies were employed to recruit participants for this investigation. The first strategy utilized an online recruitment approach and focused on soliciting participants in both treatment conditions. Specifically, the McNair Scholars Program Assistant Directors were asked to send a recruitment email to all McNair Scholars Program applicants over the past 2 years (See Appendix B). Two weeks after dissemination of the initial recruitment email, the assistant directors sent a reminder email to all of the McNair Scholars Program applicants requesting participation from those who did not complete the survey in round 1. The second recruitment strategy was targeted towards participants in the treatment condition only. Specifically, the investigator met in person with current McNair Scholars, discussed the purpose of the study, answered any questions, and requested their participation. The third strategy was targeted towards the control condition. The general population of undergraduate students was solicited to participate with assistance from various faculty members and an online survey database (i.e., Psych Participation Pool). For this strategy, data from respondents was only used if participants met inclusion criteria (i.e., first generation college student status, low income status, GPA above 3.0). Last, the McNair Scholars Program Assistant Directors provided the official transcript GPA's of McNair Scholars Program scholars for the fall semester prior to enrolling in the McNair Scholars Program and the fall after completing their summer research component.

Research Design

Efforts to improve the quality of programmatic evaluations at the postsecondary level have highlighted the importance of control groups, comparison groups, and matching (James, Jurich, & Estes, 2001). According to James, Jurich, & Estes (2001), control groups have provided the most rigorous methodology to examine the effect of an intervention. Programmatic efforts failing to utilize this methodological approach substantially decrease their ability to attribute outcomes achieved to their academic enrichment program. Considering this, a total sample of 60 participants for the control condition and 60 for the treatment condition was sought. The treatment condition consisted of first generation and low income students who participated in the McNair Scholars Program and the control condition consisted of first generation and low income students who did not participate in the McNair Scholars Program, but reported similar academic performance, first generation college student status, and low income student status. It is important to note that using students who were not accepted into the McNair Scholars Program could be a potential limitation of the current study because these youths may be considered not as strong academically as students who were accepted into McNair Scholars Program. However, to address this concern, first generation and low income non-McNair Scholars Program students were only included in the current study if they reported a minimum GPA of 3.0. In addition to demonstrating similar academic achievement, inclusion criteria for the control condition required that a student must have: 1) been a U.S. citizen, 2) been a regularly enrolled student at a 4 year college or university, 3) been a first generation or low income student (e.g., a student whose parents did not obtain a bachelor's degree or a students' parent or guardian has a taxable income

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that does not exceed 150 percent of the current poverty level), and 4) completed at least 60 credit hours towards a baccalaureate degree, with at least 15 hours left to complete.

As seen in Table 3.1, a total of 132 invitations to participate in the current study were sent to qualifying students using recruitment strategies one and two. Eighty-one invitations to participate were sent to students at Setting 1 (45 invitations to McNair and 36 to non-McNair) and 51 invitations were sent to students at Setting 2 (30 invitations to McNair and 10 to non-McNair). At Setting 1, a survey response rate of 60% for McNair and 33% for non-McNair students was achieved. At Setting 2, a survey response rate of 40% by McNair and 9% by non-McNair students was achieved. From the third recruitment strategy (i.e., participation solicitation from the general university population), a total of 120 participants were collected. Of those participants, 54 met study inclusion criteria (See Table 3.2). The total sample size achieved for the current study included 39 McNair and 71 non-McNair students. Table 3.3 illustrates the ethnic demographics of the students who participated in the current study. Of those participants, 60.9% identified as non-minority and 49.1 % identified as minority (non-White).

Study Procedures

All students who were eligible to participate received an email explaining the study and requesting their participation (Appendix E). Students were informed that their participation was completely voluntary and their responses would be kept confidential. Participants were then instructed to follow a link to the web-based survey and required to check a box indicating consent to participate. Students then completed a 25 to 30 minute survey. Participants were not allowed to skip questions on this survey, thus the current investigation did not need to address missing data. For participating in the study,

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participants were entered into a raffle to win one of two $50.00 Visa gift cards or receive extra credit from their professors. To ensure anonymity, raw data was de-identified in all data sets.

Measures

Demographic Questionnaire. Background information included: 1) minority status, 2) work status (e.g., the number of hours students work a week), and 3) high school GPA (Appendix F). Research demonstrates ethnicity, employment, and high school GPA differences in academic self-perceptions and expectations (Ishitani, 2004; McMillion, 2005; Paulsen & St John, 2002; Spaights, Kenner, & Dixon, 1986). Thus, these factors will be included as control variables.

<u>Dependent Variables</u>

Academic Self-Efficacy. The college academic self-efficacy scale (CASES; Owen & Froman, 1988) was used to measure students' degree of confidence in completing typical academic tasks. The measure consists of 31 items answered on a five-point Likert scale. Responses range from *Quite a Lot* (5 point) to *None* (1 point). Sample items include, "Taking essay test" and "Challenging the professor's opinion in class." Good empirical support for both factorial and concurrent validity and a test-retest reliability coefficient at .85 with an 8-week period was reported (Owen & Froman, 1988). Owen & Forman (1988) also indicated internal consistency coefficients between .90 and .92. Other studies have replicated these findings reporting consistency coefficient of .93 (Choi, 2004). For the current study an acceptable reliability of .95 was found.

Academic Self-Concept. Most studies examining academic self-concept among students have relied on one of two measures largely depending on the age group of the

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students. For college youth, the Academic Self-Concept Survey (ASCS; Reynolds, Ramirez, Magrina, & Allen, 1980) has been frequently used to measure academic self-concept among college students. Sample items from this 40 itemed measure include "All in all, I feel I am a capable student" and "No matter how hard, I try I don't do well in school". Responses range from *Strongly Agree* (4 point) to *Strongly Disagree* (1 point). This measure has also been regarded as a good predictor of academic success among the minority college population (e.g., low income and first generation youth) (Gerardi, 1990). Reynolds and colleagues' (1980) Academic Self-Concept Scale has been widely accepted as the most reliable way to measure how students think about themselves and their abilities in a post-secondary educational context. Previous studies demonstrated that this measure yields a test-retest reliability of .88 and an estimated internal consistency alpha of .92 (Reynolds, 1988). Later studies also demonstrated an internal consistency alpha of .91 (Ramirez, Magrina, & Allen, 1980). Other researchers exploring the reliability for this scale have found alpha coefficients ranging from .91 to .95 (Cokley, Komarraju, Cunningham, & Muhamad, 2003). An alpha of .94 was found for the current study.

Educational Expectations. Five questions were used to tap into students' educational expectations. Sample questions include "I expect to receive my bachelor's degree" and "I expect to be accepted to graduate school". These five expectation questions were developed based on the larger objective goals of McNair (e.g. student will apply to graduate school, students will attend graduate school). Questions were measured using a 5 point Likert scale with responses ranging from *Strongly Agree* (5 point) to *Strongly Disagree* (1 point). The Cronbach's alpha achieved in this study was acceptable at .88.

Academic Performance. Scholar's academic performance was measured using GPAs collected from their university transcripts provided by the McNair coordinator. Scholars GPA's both the semester prior to, and one year after participation in the McNair Scholars Program were obtained.

<u>Independent Variables</u>

Peer Support. Support received from peers was measured using the Friend subscale of the Perceived Social Support Inventory (PSSI; Procidano & Heller, 1983). The subscale, consisting of 20 items, taps into the degree to which university peers provide support and comfort to students. Responses consisted of *Strongly Agree* (5 point) to *Strongly Disagree* (1 point). Sample questions include "I rely on my friends for emotional support." and "When I confide in my friends, it makes me feel comfortable". While Procidano & Heller (1983) reported an alpha coefficient of .88 and a test retest reliability of .80, other researchers using the PSSI have reported a Cronbach alpha of .89 (Gloria, Robinson Kurpius, Hamilton, & Wilson, 1999). In the current study an alpha coefficient of .94 was achieved.

Faculty Support. To measure faculty support, Shelton's (2003) Perceived Faculty Support Scale was utilized. This scale (24 items) assesses the degree students feel supported by their faculty. Questions were measured using a 5 point Likert scale with responses ranging from *Strongly Agree* (5 point) to *Strongly Disagree* (1 point). In previous research (Shelton, 2003), a factor analysis of the scale revealed two factors: Psychological Support and Functional Support. Psychological support measured participants' perceptions that they are supported in developing competence and self-worth. On the other hand, functional support measured the degree to which participants

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feel supported in persisting to achieve academic success. High scores on this measure indicated that an individual perceives a stronger sense of support by their faculty members. Reliability for this measure was .96.

Family Support. The family subscale of Winefield, Winefirls, & Tiggemann's (1992) Multidimensional Support Scale (MDSS) was used to measure family support. This 6 item scale measures emotional, practical, and informational support in young adults. A sample item included: "How often did you feel that your family and close friends were really trying to understand your problems?" In the current study, an alpha of .83 was found.

Performance and Strategy Feedback. Three questions assessed students' satisfaction with feedback from McNair faulty. Responses include: *"Very Satisfied", "Mostly Satisfied", "Satisfied", "Mostly Unsatisfied", and "Very Unsatisfied".* A sample item included: "Strategies suggested to help improve your performance". This measure was created by the current researcher. Questions were adapted from Tierney, Corwin and Colyar (2005) theory on college enrichment program success and in the current study a reliability of .89 was found.

Extracurricular Activity Involvement. Three questions were used to assess students' extracurricular activity involvement. These questions assessed their level involvement in non-college sponsored activities and college sponsored activities. Students responded to questions on a scale of 1= *Not Engaged* to 4= *Very Engaged*. This measure was also created by the current researcher. Questions were adapted from Tierney, Corwin and Colyar (2005) theory on college enrichment program success. For this measure the alpha identified was in the low range (.45).

Campus Climate. An adapted version of Trickett & Moos' (1973) Classroom Environment Scale was utilized to measure students' perceptions of their campus climate. The scale was originally developed for use with students in elementary and high school. Thus, the current scale was adapted to only include questions pertinent to college students. Additionally, language from the original scale was changed to reflect the college environment. For example, students at this "college" get to know each other really well. Dimensions of this scale focused on how both faculty and students impact campus climate. In the current study, the campus climate measure consisted of 10 items. Examples of these items included: "Students at this college are very interested in getting to know other students" and "teachers ask students what they want to learn about". For this measure, scale reliability was acceptable ($\alpha = .92$).

Data Analytic Strategy

The current study sought to identify factors associated with the academic success of first generation and low income college students and to understand how participation in McNair Scholars Program was associated with this population's academic-related outcomes. Reliability estimates were computed prior to the data analyses to determine the overall consistency of each measure. Means, medians, and modes for continuous variables and frequencies for categorical variables were obtained in order to examine the data for skewness and outliers. The specific data analytic strategies were as follows.

Research Question 1 & 2

Research question one utilized a within group design and focused on identifying factors associated with first generation and low income college students' academic self-concept, academic self-esteem, and educational expectations. For research question 2, a

within and between group design, was utilized. Specifically, this question examined whether participation in McNair impacted first generation and low income college students' academic beliefs and educational expectations after accounting for the influence of barriers and promotive factors.

To test these research questions, three hierarchical multiple regression analyses were employed. In step one, covariates (e.g., minority status, high school GPA, and employment status) were entered into the regression model. In step 2, promotive factors and barriers to achievement (e.g., peer support, family support, faculty support, performance/ strategy feedback, campus climate, and extracurricular involvement) were added to each separate model (i.e., academic self-concept, academic self-efficacy, or educational expectations). In step 3, the additive role of McNair status was added to the model. McNair status was dichotomized into 1) McNair Scholars Program participant and 2) Non-McNair Scholars Program participant.

Research Question 3

For research question 3, a within group, pre-test posttest design assessed whether participation in the McNair Scholars Program improved scholars' academic performance. The pre and post treatment design has been found to be a methodologically sound approach to examine the effectiveness of a program (Boyd, 2002; James, Jurich, & Estes, 2001). In line with previous studies utilizing a pre-test post-test design in program evaluations, collecting data before and after key activities or workshops geared towards achieving programmatic objectives is optimal (Boyd, 2002). However, with the use of a design that collects baseline and data after participation, issues of maturation, attrition, and measurement may impact assessment of program participation impact. Nevertheless,

this approach is still considered an optimal way to investigate a program's effectiveness, even more so in combination with the use of control and comparison groups (James, Jurich, & Estes, 2001).

To explore differences in McNair scholars' pre-McNair GPA and post-McNair GPA, a paired t-test was used. A paired t-test is often the preferred statistical method when measurements are taken from the same subject before and after some intervention or manipulation (Samuels, Witmer, & Schaffner, 2014). Based on the design of this study, the t-test was an appropriate analysis for the examination of this research question. Since this statistical analysis is most commonly used when test data follows a normal distribution, tests of normality were conducted. Once normality of the data was established, the paired samples t-test was used to explore differences in McNair scholars' GPA after participation in the McNair Scholars Program.

Table 3.1 Survey Response Rates

	Invitations Sent		Invitation Responses	
	McNair	*Non-McNair*	*McNair*	*Non-McNair*
Setting 1	45	149	27	69
Setting 2	30	21	12	2

Table 3.2 Recruitment Strategy 3 Statistics

	Surveys Completed	Qualified Surveys
Setting 1	120	54

Table 3.3 Ethnicity Demographics by McNair Status

	McNair N= 39		Non-McNair N= 71	
	Frequency	*Percentage*	*Frequency*	*Percentage*
Black	17	47.2	12	85.7
Hispanic	3	8.3	--	--
White, Non-Hispanic	14	38.9	2	14.3
Asian or Pacific Islander	2	5.6	--	--

CHAPTER 4

RESULTS

Preliminary Analyses

Table 4.1 shows the means and standard deviations for the primary variables of interest. Across all first generation and low income college students, the means for peer support *(M= 3.92, SD= .628)*, performance and strategy feedback *(M= 3.52, SD= .940)*, family support *(M= 3.19, SD= .941)*, faculty support *(M= 3.87, SD= .576)*, campus climate *(M= 3.24, SD= .675)*, extra-curricular involvement *(M= 3.02, SD= .602)*, academic self-concept *(M= 2.99, SD= .431)*, and academic self-efficacy *(M= 3.65, SD= .600)* were moderately positive. The mean for educational expectations *(M= 4.62, SD= .700)* was positive.

As seen in Table 4.2, when separated by participants' McNair status, McNair scholars reported positive perceptions of their educational expectations *(M= 4.69, SD= .644)* and moderately positive perceptions of their academic self-efficacy *(M= 3.76, SD= .616)* and academic self-concept *(M= 3.12, SD= .421)*. For non-McNair students, lower, yet still favorable perceptions of educational expectations *(M= 4.57, SD= .728)*, academic self-efficacy *(M= 3.59, SD= .585)*, and perceived academic self-concept *(M= 2.93, SD= .425)* were reported.

Among the independent variables, McNair scholars' reports of involvement in extracurricular activities *(M= 3.19, SD= .576)*, peer support *(M= 3.82, SD= .675)*, faculty support *(M= 3.88, SD= .635)*, campus climate *(M= 3.15, SD= .694),* and performance and strategy feedback *(M= 374, SD= .938)* were all moderately favorable. The average GPA for McNair scholars was a 3.62 (*SD= .390*). Among non-McNair scholars, similar reports of extracurricular involvement *(M= 2.93, SD= .601),* faculty support *(M= 3.87, SD= .545)* and performance and strategy feedback *(M= 3.39, SD= .925)* were reported. However, slightly higher mean reports of peer support *(M= 3.97, SD= .600)* and campus climate *(M= 3.29, SD= .664)* were reported by non-McNair students. The average GPA (self-reported) among non-McNair students was 3.35 (*SD= .596*).

Post Hoc Power Analyses

In order to ensure that the current study was adequately powered to identify any significant associations, given that they were present, power analyses were conducted using G Power 3.1.9.2. For the current study, 80 percent was selected as the desired power based on research that has identified .8 as an adequate power level (Cohen, 1990). Based on the results of these post hoc power analyses, 88 and 85 percent power for research questions 1 and 2, respectively, were achieved for medium effect sizes. Results from these analyses indicated that the current study had sufficient power to identify a medium effect at a significance level of .05.

What factors promote or are barriers to achievement among first generation and low income college students?

Research Question 1A: What promotive/barrier factors are associated with first generation and low income students' academic self-concept?

Prior to conducting the analyses for this research question, the relevant assumptions for a hierarchical multiple regression were tested. To ensure the validity of potential findings, the data was checked for: 1) normal distribution, 2) homoscedasticity, and 3) independent observations. Results from the probability plot of the residuals and the equal scatter between the plot of residuals and predicted values indicated that the assumptions of this test were met. The predictor variable, extracurricular activity involvement was removed from these analyses due to low scale reliability (α. 45).

A three step hierarchical multiple regression was conducted for each of the three dependent variables of this investigation (e.g., academic self-concept, academic self-efficacy, and educational expectations). After controlling for study covariates (e.g., minority status, high school GPA, and employment status) in Step 1, peer support, family support, faculty support, performance/strategy feedback, and campus climate, were entered into the second step. As seen in Table 4.3, findings partially support the hypothesis that peer support, family support, faculty support, performance/ strategy feedback, and campus climate would be associated with more positive academic self-concept. The results show that faculty support ($\beta= .209, p= .008$) and campus climate ($\beta= .154, p= .026$) were both significantly associated with academic self-concept. The

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model, which was significant $F(8, 101) = 5.070$, $p < .000$, explained an additional 30% of the variance in these youths' academic self-concept.

Research Question 1B: What promotive/barrier factors are associated with first generation and low income students' academic self-efficacy?

Table 4.4 presents the coefficients for each factor's association with academic self-efficacy. After controlling for minority status, high school GPA, and employment status, main effects for performance and strategy feedback ($\beta = .209$, $p = .008)$ and campus climate ($\beta = .373$, $p = .000)$ were present. In step 2, an additional 36% of the variance in academic self-efficacy was explained by this model, $F(8, 101) = 7.136$, $p < .000$. Based on these findings, partial support for this hypothesis was found.

Research Question 1C: What promotive/barrier factors are associated with first generation and low income students' educational expectations?

In step 2, the overall model for promotive/barrier factors association with educational expectations was not significant $F(8, 101) = 1.810$, $p < .084$. Family support, however, was positively associated with educational expectations ($\beta = .283$, $p = .019)$. In this step, an additional 12 percent of the variance in first generation and low income students' educational expectations was explained. Partial support for this hypothesis was provided by the current results as seen in Table 4.5.

Does McNair participation, over and beyond barrier/promotive factors, predict college students' academic outcomes?

Research Question 2A: Is McNair participation, over and beyond barrier/promotive factors, associated with college students' academic self-concept?

After entering step 1 (covariates) and 2 (promotive/barriers) variables in the regression model, McNair participation status was introduced in step three. Results revealed that faculty support (β= .225, p= .004) and campus climate (β= .169, p= .014) retained their associations in step 3. Furthermore, over and above barriers and promotive factors, McNair status was significantly associated with academic self-concept (β= .174, p= .026). This step explained an additional 3.4% of the variance in academic self-concept (See Table 5). This finding provided support for the hypothesis that, above and beyond the variance from factors in steps 1 and 2, McNair status would be associated with first generation and low income college youths' academic self-concept.

Research Question 2B: Is McNair participation, over and beyond barrier/promotive factors, associated with college students' academic self-efficacy?

In step 3 of the academic self-efficacy model, campus climate was the only step 2 factor retaining its association (β= .392, p= .000). Above and beyond the variance accounted for by factors in steps 1 and 2, McNair status explained additional 2.9% variance in academic self-efficacy (β= .219, p= .032) and this change in R^2 was significant F (9, 100) = 7.107, p <.000. This finding supported the current hypothesis that McNair would account for a significant amount of variance in academic self-efficacy above and beyond the variance accounted for by study covariates, and barrier/promotive factors.

No support for the current hypothesis was provided by study findings. As seen in table 7, while family support remained significantly associated with educational expectations in step 3 ($\beta = .298$, $p = .014$), McNair status was not associated with educational expectations over and beyond the examined barrier/promotive factors ($\beta = .200$, $p = .172$) and this step in the model was not significant $F(9, 100) = 1.834$, $p < .071$. McNair status explained an additional 1.7% of the variance in educational expectations.

Does participation in the McNair program influence college students' academic outcomes?

A paired t-test was used to examine whether McNair students' GPAs prior to starting McNair differed from their GPAs a year after being accepted into the program. Before conducting this test, three assumptions pertinent to the paired sample t-test were checked: 1) subjects are independent, 2) the dependent variables are measured on an interval scale, and 3) normal distribution of the differences. After a visual check of a normal probability plot, all assumptions were found to be met.

For research question four, it was anticipated that McNair scholars would demonstrate a significant increase in GPAs after participating in the program. Results of the paired t-test were found to support the hypothesized difference in scholars' GPAs. Findings indicated a significant mean difference between McNair students pre and post McNair GPA's, $t(29) = -2.86$, $p < .01$, such that post McNair GPAs ($M = 3.73$, $SD = .242$) were greater than pre McNair GPAs ($M = 3.67$, $SD = .24$).

Table 4.1

Means, Standard Deviations, and Intercorrelations among Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Minority	1													
2. Age	-.088	1												
3. HS GPA	.158	.047	1											
4. Employment Status	-.121	-.150	-.086	1										
5. Peer Support	-.002	-.090	.027	.071	1									
6. Family Support	.096	.089	.036	-.073	.327**	1								
7. Performance/Strategy Feedback	.065	-.005	.004	.154	.365**	.131	1							
8. Faculty Support	.188	.033	.028	.144	.370**	.061	573**	1						
9. Extracurricular	.286**	-.151	-.037	-.019	.008	.196	.118	.045	1					
10. Campus Climate	-.007	-.056	.040	.150	.371**	.462**	.378**	.340**	.184	1				
11. Educational Expectations	.152	-.115	-.017	.049	.2110*	.273**	.178	.215*	.189*	.149	1			
12. ASC	-.005	.040	.045	.111	.211*	.180	.421**	.448**	.081	.396**	.235*	1		
13. ASE	.067	.005	.075	.011	.256**	.337**	.414**	.323**	.182	.547**	.249*	.707**	1	
14. College GPA	-.054	.005	.311**	.080	-.084	-.028	.162	.125	.092	.008	.136	.399**	.386**	1

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Note: * *p <.05*   ** *p<.01;* ASC= Academic Self-Concept, ASE= Academic Self-Efficacy; GPA= Grade Point Average HS GPA= High School Grade Point Average Minority: 1= Minority: 2= Non-Minority; Employment Status: 1= Yes; 2=No

**. Correlation is significant at the 0.01 level (2-tailed).

 *. Correlation is significant at the 0.05 level (2-tailed).

Table 4.2

Means and Standard Deviations for McNair and Non-McNair Students

Variable	McNair N= 39		Non-McNair N= 71	
	M	*SD*	*M*	*SD*
Educational Expectations	4.70	.644	4.57	.728
Extracurricular Activities	3.19	.576	2.93	.600
Faculty Support	3.88	.635	3.87	.545
Performance & Strategy Feedback	3.74	.938	3.39	.925
Peer Support	3.82	.675	3.97	.599
ASC	3.12	.421	2.93	.425
ASE	3.76	.616	3.59	.585
GPA	3.62	.390	3.35	.596

Note: ASC= Academic Self-Concept, ASE= Academic Self-Efficacy; GPA= Grade Point Average

Table 4.3

Summary of Hierarchical Regression Analysis for Variables Predicting Academic Self-Concept

	B	SE B	β
Step 1: Covariates			
Minority	-.086	.211	-409
HS GPA	.030	.051	.590
Employment Status	.054	.043	1.248
R^2	.017		
F for change in R^2	.596		
Step 2: Barriers/Promotive Factors			
Minority	-.254	.193	-.128
HS GPA	.019	.045	-.026
Employment Status	.029	.038	.071
Peer Support	-.023	.065	-.035
Performance & Strategy Feedback	.071	.047	.161
Faculty Support	.209**	.077	.288
Campus Climate	.154*	.068	.239
Family Support	.023	.064	.036
R^2	.287		
F for change in R^2	5.070**		
Step 2: McNair Participation			
Minority	-.245	.189	-.124
HS GPA	.006	.044	.011
Employment Status	.014	.038	034
Peer Support	-.006	.065	-.009
Performance & Strategy Feedback	.043	.048	.098
Faculty Support	.225**	.076	.309
Campus Climate	.169*	.067	.262
Family Support	.035	.063	.055
McNair Participation	.174*	.077	-.201
R^2	.287		
F for change in R^2	5.070**		

Note: * $p < .05$ ** $p < .01$; HS GPA= High School Grade Point Average Minority: 1= Minority: 2= Non-Minority; Employment Status: 1= Yes; 2=No; Non-McNair= 1, McNair=2

Table 4.4

Summary of Hierarchical Regression Analysis for Variables Predicting Academic Self-Efficacy

	B	SE B	β
Step 1: Covariates			
Minority	-.068	.294	-.025
HS GPA	.056	.072	.077
Employment Status	.012	.060	.002
R^2	.006		
F for change in R^2	.217		
Step 2: Barriers/Promotive Factors			
Minority	-.337	.252	-.123
HS GPA	.038	.059	.052
Employment Status	-.019	.050	-.034
Peer Support	-.009	.086	-.010
Performance & Strategy Feedback	.124*	.062	.203
Faculty Support	.076	.101	.075
Campus Climate	.373**	.090	.418
Family Support	.092	.084	.103
R^2	.361		
F for change in R^2	7.136**		
Step 2: McNair Participation			
Minority	-.327	.248	-.119
HS GPA	.021	.058	.029
Employment Status	-.038	.050	-.068
Peer Support	.013	.085	.014
Performance & Strategy Feedback	.089	.063	.145
Faculty Support	.095	.099	.095
Campus Climate	.392**	.088	.439
Family Support	.107	.082	.121
McNair Participation	.219*	.101	-.184
R^2	.390		
F for change in R^2	7.107**		

Note: $*p < .05$ $**p < .01$; HS GPA= High School Grade Point Average Minority: 1= Minority: 2= Non-Minority; Employment Status: 1= Yes; 2=No; Non-McNair= 1, McNair=2

Table 4.5

Summary of Hierarchical Regression Analysis for Variables Predicting Educational Expectations

	B	SE B	β
Step 1: Covariates			
Minority	-.102	.359	-.030
HS GPA	-.009	.087	-.011
Employment Status	.041	.073	.061
R^2	.003		
F for change in R^2	.117		
Step 2: Barriers/Promotive Factors			
Minority	-.193	.360	-.058
HS GPA	-.021	.084	-.023
Employment Status	.043	.071	.064
Peer Support	.092	.122	.082
Performance & Strategy Feedback	.028	.088	.037
Faculty Support	.210	.144	.171
Campus Climate	-.073	.128	-.067
Family Support	.283*	.119	.262
R^2	.125		
F for change in R^2	1.810		
Step 2: McNair Participation			
Minority	-.183	.358	-.005
HS GPA	-.037	.084	-.014
Employment Status	.026	.072	.039
Peer Support	.112	.122	.100
Performance & Strategy Feedback	-.004	.091	-.006
Faculty Support	.228	.144	.186
Campus Climate	-.056	.128	-.051
Family Support	.298*	.119	.276
McNair Participation	.200	.146	-.138
R^2	.142		
F for change in R^2	1.834		

Note: * $p < .05$ ** $p < .01$; HS GPA= High School Grade Point Average Minority: 1= Minority: 2= Non-Minority; Employment Status: 1= Yes; 2=No; Non-McNair= 1, McNair=2

CHAPTER 5

DISCUSSION

Research has demonstrated that first generation and low income college students experience unique achievement-related barriers not typically encountered by their counterparts whose parents attended college and/or are of higher socioeconomic status (Hahs-Vaugn, 2004; Kahlenberg, 2004; Mortensen, 2003; Prospero & Vohra-Gupta, 2007). Notable efforts to address these barriers have been emphasized by researchers and theorists who have identified several factors (e.g., peer support, faculty support, family support, extracurricular activities, campus climate, and performance and strategy feedback) that may impact these youths' achievement (Tierney, Corwin, & Colyar, 2005; Wigfield & Eccles, 2001). In response to research highlighting the effects of these barriers on first generation and low income students' academic achievement, academic enrichment programs have been implemented with the goal of reducing these barriers by incorporating factors that promote academic achievement. The McNair Scholars program is one such program that has integrated theoretically supported strategies within the foundation of its programmatic efforts to promote greater academic achievement and post baccalaureate degree attainment among its scholars. While theory underscores the promotive nature of these factors (Tierney, Corwin, & Colyar, 2005), more research exploring how they are associated with first generation and low income student youths' academic-related outcomes is warranted. Further, the benefits of academic enrichment programs for this population are also important to examine.

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Accordingly, the current study sought to identify factors that may be promotive of or barriers to first generation and low income youths' achievement-related outcomes. These findings were used in an effort to determine whether the role of McNair was still significant to these youths' achievement outcomes after accounting for these promotive/barrier factors. This step in the investigation was important in determining if the McNair program itself contributed significantly to first generation and low income students' academic-related outcomes beyond variance accounted for by the promotive/barrier factors. To explore how McNair impacts first generation and low income students' outcomes, several approaches were employed—1) a between-group; 2) within-group; and 3) within-person approach. Specifically, this investigation explored: 1) factors that relate to low income and first generation college students' academic outcomes; 2) whether McNair participation was associated with academic outcomes above and beyond these factors; and 3) how McNair may impact its participants' academic performance over time.

Promotive Factors and Barriers to Academic Outcomes

Risk/resiliency models have been used to identify factors that may promote and/or be barriers to youths' academic achievement (Fergus & Zimmerman, 2005; Penrose, 2002; Prelow & Loukas, 2003). A number of studies have explored how demographics factors (e.g., economic status, employment status) may be barriers to or protective factors for first generation and low income youths' academic achievement (Ishitani, 2003; Thayer, 2000; Terenzini et al., 1996). The current investigation sought to extend this literature by focusing on college specific and family contextual factors. As in line with these previous research (Tierney, Corwin, & Colyar, 2005), findings from this study

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generally indicated that the variables under investigation were associated with achievement-related outcomes for these youths. By in large, study hypotheses were supported. Findings indicated that faculty support and campus climate were related to first generation and low income youths' academic self-concept, performance & strategy feedback and campus climate was associated with academic self-efficacy, and family support was associated with educational expectations.

Studies have consistently found that faculty support is positively associated with college youths' academic outcomes (Braxton & Hirschy, 2005; Braxton, Hirschy, & McClendon, 2004; Tinto, 1998). Specific to first generation and low income youth, faculty support has been cited as a major contributor to these youths' success (Chaney, Muraskin, Cahalan, & Goodwin, 1998; Gregg, 2007 Longwell-Grice, & Longwell-Grice, 2008). In line with this research, results of the current study indicated that faculty support was associated with more positive academic self-concept. This suggests that, for the current population of first generation and low income students, faculty support may promote positive achievement outcomes. Work by Schunk and colleagues (2008), which proposed that first generation youths' academic beliefs may be bolstered when they are engaged with faculty who are supportive and promote skill enhancement, bolster these findings. It further supports studies that have found more supportive faculty interactions to be positively associated with other academic beliefs (i.e. academic self-efficacy) (Vuong, Brown-Welty, & Tracz, 2010). While the current investigation did not find faculty support to be associated with first generation and low income youths' academic self-efficacy, it nevertheless highlights faculty supports' association with these youths' academic beliefs and subsequently their academic success.

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The hypotheses that campus climate would be associated higher academic self-concept & academic self-efficacy were also supported. These results were particularly important as research exploring first generation and low income students' perceptions of campus climate has been limited. Further, research exploring the association between campus climate and academic-related outcomes has been nonexistent. Nevertheless, this finding supports previous research signifying that students with more positive campus perceptions, as indicated by greater social and academic integration, will likely experience more positive achievement outcomes (Strage, 1999). It further suggests that positive perceptions of campus climate are a promotive factor for these youths. Work by Steele (1992; 1997) has posited that students who have a higher proclivity of encountering negative school climates may begin to disidentify from their university and subsequently remove their academic self-concept from their general self-concepts. Fortunately, results indicated that these youths reported favorable perceptions of campus climate. Drawing from Steele's (1992, 1997) research, it is likely that these youths' more favorable perceptions of campus climate were associated with a greater integration of their academic self-concept to their general self-concept. As evidenced by the results of this study, these youths' more positive perceptions of their campus climate likely was associated with more positive personal beliefs about their academic abilities and skills set.

While empirical research exploring the association between campus climate and academic self-efficacy/concept for first generation and low income youth is not currently available, studies exploring this relationship among ethnic minorities have supported the findings of this investigation. A study by Greenstein (2002), found that for African

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American students, campus racial climate was associated with academic self-efficacy. Greenstein's (2002) research and the current investigation illustrate that positive campus climates may help youth who traditionally experience forms isolation or discrimination navigate these barriers and excel academically. His work illustrates the importance of educating first generation and low income youth within environments that are positive and supportive. Failure to do so may results in low academic self-concepts and efficacy (Taylor, 1986).

Performance and strategy feedback was also significantly associated with first generation and low income youths' academic self-efficacy. This positive association is explained by research suggesting that youth who are given specific strategies or techniques to improve their learning are better equipped to translate that learning into growth in other academics areas (Schunk, Pintrich, & Meece, 2008). In turn, it is likely that this growth increases students' confidence in their ability to perform various academic tasks at different levels. These findings offer strong empirical support for critical programmatic components that academic enrichment programs should consider incorporating (e.g., the integration of tiered peer mentoring). It is important to note here that with a tiered peer mentoring model that integrates performance and strategy feedback, it will be important for models to be cultivated within positive and supportive environments (Chaney, Muraskin, Cahalan, & Goodwin, 1998).

While research has discussed the positive impacts of family on first generation and low income youths' achievement (Holodick-Reed, 2016), studies have also noted that families can create unique challenge for these youths (McConnell, 2000; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996; Tinto, 1993). Research has proposed that

reassuring and affirming families provide their students with support that is likely to translate into more positive achievement outcomes (Holodick-Reed, 2016). However, studies have also suggested that parents and family of first generation and low income youth are often unable to provide their students with the emotional and instrumental support necessary to succeed in college (Garcia, 2015; Ting, 2003). Nevertheless, results of the current study were in line with research that has highlighted a positive association between family and students' success. Specifically, this investigation found that, for these youths, greater perceptions of family support were associated with higher educational expectations. What this finding suggests is that first generation and low income youths' familial support is essential to their educational goals. This supports previous research suggesting that family plays a key role in first generation and low income youths' college matriculation, persistence, and degree expectations (Holodick-Reed, 2016). Specifically, studies have suggested that students will feel more encouraged and confident in their abilities to finish college or purse graduate level education when they have the support of their family (Holodick-Reed, 2016). Moreover, when considering the role of McNair, which provides participants with tuition and stipend assistance, it is possible that the financial barriers encountered by these youths may be avoided. This may in turn reduce financial-related stress for students and families and possibly increase support. While the current study did not explore various types of family support (e.g., financial, emotional support, instrumental support), it would be important to understand what types of supports are important to these youths' outcomes.

For the current study, campus climate, faculty support, family support, and performance & strategy feedback were all related to at least one achievement-related

outcome. Interestingly, peer support was not found to be associated with any of the examined outcomes. This was particularly unexpected given that previous theorists and researchers have postulated a positive relationship between these constructs (Dennis, Phinney, & Chuateco, 2005; Tinery, Corwin, & Colar, 1999: Wigfield & Eccles, 2002). However, other studies exploring the relationship between peer support and non-performance specific outcomes have found no significant relationship. In a sample of 329 first and continuing generation college freshman, Purswell, Yazedjian, and Toews (2008) found among students whose parents had no college experience that, peer support was not associated with academic behaviors. Conversely, this study found that peer support was predictive of academic behaviors for students whose parents had completed college. Considering the results of their study and the current investigation, it is possible that the role of peer support functions differently for first generation and low income college students than for non-first generation and low income youth. These findings illustrate a need for research that explores whether factors found to be related to students' achievement function in the same way for first generation and low income students.

The Role of McNair on Academic-Related Outcomes

Within Groups Differences

Studies have demonstrated that academic enrichment programs are helpful tools that provide first generation and low income youth with the skills necessary to navigate barriers to achievement (Beebe, Burges, Carroll, & Charlens, 2009; Brooks, Jones, & Burt, 2013; Ishiyama & Hopkins 2003; King, Vidourek, Davis, & McClellan, 2002; McKinney, 2010; Stake & Mares, 2001). Beyond the skills and tools that academic enrichment programs provide, research has suggested that the programs themselves are

important supports for these youths (Tierney, Corwin & Colar, 2005). Findings from the current study corroborate these assertions. That is, it was found that, above and beyond the variance accounted for by peer support, family support, faculty support, campus climate, and performance and strategy feedback, McNair was significantly associated with academic self-concept and academic self-efficacy.

Researchers have highlighted the importance of academic enrichment programs, like McNair, to the success of youth who encounter achievement-related barriers. While studies have discussed factors that may help these youths to navigate the barriers they face (Penrose, 2002; Schunk, Pintrich, & Meece, 2008; Tierney, Corwin, & Colyar, 2005; Tinto, 1987), academic enrichments program have been viewed as the best method to facilitate these factors (Tierney, Corwin, & Colyar, 2005). While the current study suggests that the role of campus climate, faculty support, family support, and performance & strategy feedback are crucial to the academic-related outcomes of first generation and low income college students, exploring the role of McNair participation above and beyond the role of these factors was important. This exploration would provide clarity on whether the role programmatic participation is critical for these youths, beyond just the role of the aforementioned factors. The current study sought to address this and hypothesized that, above and beyond the role of campus climate, faculty support, family support, peer support, and performance & strategy feedback, the role of McNair would be associated with more positive academic self-concept, academic self-efficacy, and educational expectations.

Partial support for this hypothesis was found, such that McNair participation was associated with more positive academic self-concept and academic self-efficacy. This

was consistent with the expectations that participation in McNair would be associated significant increases in these youths' academic self-concept and academic self-efficacy. McNair participation was likely positively related to academic beliefs given that the program itself is structured to facilitate growth in these areas. When compared to non-McNair participants, McNair participants receive targeted one-on-one support from multiple faculty mentors and direct performance and strategy feedback, all within a supportive and affirming environmental context (Ronald E. McNair Annual Performance Report, 2013; Willison & Gibson, 2011). Essentially, while it is possible for first generation and low income students to acquire these supports outside an academic enrichment program, the McNair program is notably more streamlined and intentional in its delivery of programmatic strategies to help these youths navigate the barriers they may encounter (Ishiyama & Hopkins, 2003). As demonstrated by the results of the current study, it appears that this intentionality translates into more positive academic self-concepts.

In a qualitative study by Willison & Gibson (2011), recent McNair alumni reported that the program provided them with the skills, knowledge, and dispositions necessary to succeed in the academic domain. McNair alumni discussed their ability to manage academic rigor and expectations, family hardships, financial stress, isolation and loneliness, and time management issues. Emerging themes included academic readiness, weaving a supportive web, being accepted, managing the clock, and staying financially fit. What these participants' responses suggests is that, through McNair, they were not only able to navigate barriers to achievement (e.g., financial, family, isolation issues), but also demonstrate more positive beliefs about their academic skills set and confidence in

their ability to perform various academic-related tasks. Furthermore, it appears that these were areas that, prior to McNair participation, they were not as competent in.

Studies have also discussed the important role of mentoring for first generation and low income youths' academic self-efficacy and self-concept (Burke & Sunal, 2010; Hellman & Harbeck, 1997; Lam, Srivatsan, Doverspike, Vesalo, & Mawasha, 2005; Ramos-Sanchez, & Nichols, 2007). Research indicates that mentoring is even more critical to youth experiencing isolation from their university (e.g., first generation and low income youth) (Burke & Sunal, 2010). Given that a major component of McNair includes multiple forms of mentoring, the current finding was not surprising. Mentoring, and specifically the McNair program, provides youth with a source of emotional support, modeling, and guidance; all factors that have been found to be important in promoting positive academic self-concept and academic self-efficacy (Martin & Dowson, 2009; Lam, Srivatsan, Doverspike, Vesalo, & Mawasha, 2005).

While the role of McNair was related to these youths' academic self-concept and self-efficacy; results did not support the hypothesis that McNair would be associated with participants' educational expectations after accounting for the roles of the campus climate, faculty support, family support, peer support, and performance & strategy feedback. This finding was surprising given that a primary goal of McNair is to prepare youth for post-baccalaureate degree attainment. Nevertheless, it is possible that the association between McNair participation and first generation and low income students' educational expectations may not be direct in nature. It is possible that another variable may moderate or mediate the relationship between McNair and educational expectations. For example, some studies have demonstrated the moderating role of campus climate for

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other academic-related outcomes (e.g., social agency & academic self-concept). Future studies exploring possible mediating or moderating roles, like campus climate, may better clarify if and how McNair may be associated with first generation and low income youths' education expectations.

Altogether, the current finding is novel in that, while studies have found differences between McNair and non-McNair participants' achievement outcomes (Derk, 2007; Esler, 1998; Ishiyama & Hopkins, 2003), few studies have explored differences between McNair and non- McNair students' achievement related-outcomes (Willison & Gibson, 2011). This finding demonstrates strengths of McNair participation for first generation and low income youth. It further highlights the need for research exploring additional non-cognitive specific outcomes that may be fostered within academic enrichment programs.

Within Person Differences

When compared to non-first generation and low income peers, studies have shown first generation and low income students to have lower GPAs (Pascarella, Pierson, Wolniak, & Terenzini, 2004). The role of programs such as McNair has been helpful in addressing these concerns. Therefore, it was important to consider how participation in the McNair Scholars Program was associated with a performance outcome like GPA. The current study found that scholars had significantly higher GPAs after one year of participation in the McNair Scholars Program. This finding was consistent with the study's hypothesis that McNair scholars would demonstrate a significant increase in GPA after participation in the program. This finding supports other programmatic evaluations demonstrating increases in students' grades after participation in an academic enrichment

program (Toven-Lindsey, Levis-Fitzgerald, Barber, & Hasson, 2015; Brooks, Jones, & Burt, 2013).

Overall, the larger implication of increases in GPA after participation in the McNair Scholars Program is interesting. Most studies evaluating the effectiveness of academic enrichment programs have focused almost exclusively on programs geared toward the promotion of positive academic outcomes among underachieving youth (Brooks, Jones, & Burt, 2013; Zhang, Fei, Quddus, & Davis, 2014). This study's findings were in line with research indicating that high achieving youth can still demonstrate significant gains in their academic performance (Stake & Mares, 2001). For the current study, students who were selected to participate in the McNair Scholars Program already demonstrated high academic performance. Thus suggesting that prior to entering McNair, these youths had developed effective skills to navigate barriers. Nevertheless, the continued academic gains demonstrated by McNair participants are definitely noteworthy. The current findings illustrate the benefit of McNair even for first generation and low income youth who have demonstrated an ability to navigate barrier to their academic achievement. More specifically, McNair helps promote greater academic success among students who demonstrate academic excellence.

Conclusion

Findings from this investigation highlight the importance and necessity of McNair to the achievement of first generation and low income youth. This study has demonstrated that, above and beyond the role of factors that promote achievement for first generation and low income youth, McNair was associated with greater academic beliefs. Further, McNair was found to increase participants' GPA. Previous research has

highlighted that the programmatic structure of McNair serves to help first generation and low income youth received support and training that, outside of McNair, they likely would not receive (Ronald E. McNair Annual Performance Report, 2013). These supports and training opportunities have included building close relationships with faculty research mentors, opportunities to publish research in professional and academic journals, opportunities to present research finding at conferences, orientation to graduate school and academic careers, and financial assistance. Further, qualitative studies reviewing McNair participants' program perceptions have illustrated that the structure within McNair (i.e., close one-on-one mentoring with faculty that assist them in the development and presentation a research project over their six week summer internship) translates into more academic confidence and subsequently greater academic performance (Willison & Gibson, 2011). In all, this study has shown that McNair positively impacts first generation and low income youths' achievement outcomes and highlights the need for McNair and similar programs for this population.

Limitations and Future Directions

While contributing to the literature in several ways, the current study is not without limitations. For the current study, McNair students' transcript GPAs were collected to answer research question 4, however transcript GPAs for non-McNair students were not attainable. As a result, for research questions 1and 2 associations between the independents variables and GPA were not explored. This would have provided a more comprehensive understanding of these factors and McNair's association with a performance specific outcome. Future studies should consider the benefits of objective measures of performance and seek to obtain these measures for both treatment

and control groups. Using a controlled measure of students' performance provides more reliable data.

Another notable limitation was the selected control group. For this investigation, first generation and low income students who applied to participate in McNair, but were not accepted, were recruited to participate in the control group. The use of students who were not accepted to McNair may be a limitation to the study. Using an existing group of students who are similar to a treatment group, but who do not participate in a program, is a strong methodological approach that evaluative efforts should consider (James, Jurich, & Estes, 2001). However, given similarities in these students' academic goals, as indicated by their decision to apply to a program designed to prepare youth for graduate school, it is possible that significant differences between these groups educational expectations may have been more difficult to detect. The general university population of first generation and low income students was also recruited to participate in the control group. While all participants were matched on first generation status, low income status, and GPA, it should be noted that the general university population of first generation and low income students were not matched on applying to McNair or having a strong interest in pursuing graduate school. While these comparative differences are important, these variations within the control group participants should be noted as a potential limitation.

Another limitation to this study was its exclusion of cultural specific barrier/promotive factors. In the current investigation, almost 40% of the sample identified as racial/ethnic minorities (29.1% Black, 4.5% Hispanic, 4.5% Asian or Pacific Islander; .9% American Indian or Alaskan Native). Exploring how cultural specific

barrier/promotive factors (e.g., racial climate, racial socialization) were associated with these youths' academic related outcomes would have added to this study's findings.

During data collection for the current investigation, two prominent events occurred that may have contributed to youths' perceptions of their campus climate. These events included the murder of an unarmed Black male by police officers and a subsequence walk out among students at the University of South Carolina in support of the victim. This racially highlighted tragedy and resulting walk out illustrated solidarity among a number of students at the University of South Carolina and may have been associated with reports of campus climate. Thus, consideration of these events helps to frame the results of the current investigation.

It is also important to consider that the racial makeup of both universities in this study was predominately White. Research would suggest that minority McNair scholars in PWIs would likely report different experiences than minority McNair students in more diverse educational environments (Negga, Applewhite, & Livingston, 2007; Terenzini, Yaeger, Bohr, Pascarella, & Amaury, 1997). For example, it is possible that minority McNair scholars' perceptions of faculty support and peer support may be different within a university setting with a more heterogonous racial population of faculty and students. Again, while the results of the current investigation can only be limited to the two PWIs, it will be important to consider and explore how the ethnic makeup of a university may impact different ethnic groups within McNair. In line with this consideration, differences in the demographics of the current sample, specifically among the McNair scholars, and previous studies should be noted. With approximately 60 percent of the current sample identifying as White, non-Hispanic, it is important to highlight that most research

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exploring first generation and low income youth has tended to report higher ethnic minority populations (Beebe, Burges, Carroll, & Charlens, 2009; Karcher, Davis III, & Powell, 2002; McKinney, 2010). Furthermore, most McNair programs have been comprised of primarily minority first generation and low income youth. This was not the case in the current investigation. However given that research has highlighted significant differences in the experiences and academic outcomes of ethnic minority and non-ethnic minority first generation and low income college students (Ishitani, 2003; Redon, 1995; Skinner, 1992), it will be important for future studies to examine how these barrier/promotive factors may be associated with academic beliefs and expectations for primarily minority population. An investigation in this area will add to the existing research that has focused heavily on minority first generation and low income youth.

A methodological limitation was also present in the current investigation. The association between extracurricular activity involvement and first generation and low income youths' academic-related outcomes and educational expectations was not explored. The inability to explore this factor's association with these achievement-related outcomes was the result of a low reliability for the measure ($\alpha = .45$). It was unfortunate that this variable was excluded from analyses given that several studies have suggested it to be an important factor in these youths' achievement-related outcomes (Foreman & Retallick, 2012; Tierney, Corwin, & Colyar, 2005; Tinto, 1993; Tomlinson-Clarke & Clarke, 1994). Nevertheless, the development of a reliable extracurricular activity involvement scale will be necessary in future studies.

Another limitation of the current investigation was it inability to obtain equal sample sizes among McNair (n=39) and non-McNair (n=71) student groups and also to

perform statistical analyses requiring higher samples sizes for adequate power. Given that McNair Scholars Programs only accept a limited number of scholars per year, acquiring necessary samples sizes can be difficult. By collecting data annually from all McNair Scholars Programs and aggregating it, studies seeking to explore achievement-related outcomes within McNair can obtain sample sizes necessary to execute more complex statistical analyses. In considering what a comprehensive evaluation of the McNair program might entail, the current study recommends the collection of McNair participants' pre and post academic self-concept, academic self-efficacy, educational expectations, academic motivation, perceptions about being accepted into graduate school, perceived preparedness for a graduate level program, family support, extracurricular activity involvement, and perceptions of their programs' climate, faculty support, peer support, and performance and strategy feedback. While this is not an exhaustive list of factors to measure, it is offered as a foundation on which McNair evaluations may begin. A programmatic evaluation of this nature would allow for a broader understanding of how McNair as a whole impacts its scholars' achievement outcomes. Nevertheless, given the dearth of research in this area, the current study provides an adequate foundation for future studies.

The generalizability of findings from this study is a limitation. For the current investigation, results can only be generalized to the two McNair Scholars Programs from which scholars were solicited. Thus, these findings are not reflective of TRIOS' McNair Scholars Program as a whole or other academic enrichment programs. Additionally, it is should be noted that variation in students' majors may be associated with their educational expectations. Specifically, is it important to consider that students within

certain majors (e.g., engineering) may not require graduate level education to maintain economic stability.

Implications and Conclusions

Despite some limitations, these findings have several implications for future research and programmatic development. While most studies to date have focused on the association between barriers/promotive factors and youths' performance-based outcomes (e.g., GPA, matriculation, graduation rates) (Billson & Terry, 1982; Hahs-Vaugn, 2004; McMillion, 2005; McCarron & Inkelas, 2006; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996; Tierney, Corwin & Colar, 2005; Tinto, 1993), a significant contribution of this study is its focus on contextual achievement-related factors for first generation and low income youth.

Findings from the current investigation highlight the presence of contextual factors that are promotive of positive achievement-related outcomes for first generation and low income youth. In particular, this investigation complements and extends previous research highlighting the importance of faculty support to youths' academic success (Braxton & Hirschy, 2005; Braxton, Hirschy, & McClendon, 2004). Empirical evidence from this study suggest that it will be important for academic enrichment programs to provide opportunities for first generation and low income youth to engage with faculty in ways that foster their perceptions of support. Moreover, the association found between performance and strategy feedback and academic self-efficacy extend research indicating that faculty members who specifically hone in on youths' academic skills and provide academic assistance can bolster youths' confidence in their ability to do well academically (Bensimon, 2007). This points to an important area for future research;

specifically, examining the moderating roles of contextual factors on the association between other contextual factors and academic-relate outcomes (e.g., academic beliefs) and further the moderating role of contextual factors on the association between academic-beliefs and performance outcomes. Theory has suggested linkages between contextual factors, academic-beliefs, and youths' performance-based outcomes (Wigfield & Eccles, 1999) and what this investigation suggests is that contextual factors may serve to moderate the associations between these relationships. This will be an important area of exploration in future research.

Alongside other studies (Gurin, Dey, Hurtado, and Gurin, 2002; Kezar & Eckel, 2000; Levin, van Laar, & Sidanius, 2003; Patton, 2002), this investigation has highlighted that students' perceptions of campus climate is important to their academic achievement. In particular it was demonstrated that, for first generation and low income youth, campus climate and academic beliefs are associated. Implications for research, programs, and also educational institutions are pronounced. It is imperative that educational institutions, programmatic efforts, and researchers regularly evaluate campus climates in order to assess for intervention needs. Institutional and programmatic interventions must be transformative in nature, that is, change must be deep, pervasive, intentional, and occur over time (Eckel & Kezar, 2003). For example, while welcoming dinners for first generation and low income youth may be earnest gestures indicating an open and supportive campus climate, alone, this will not likely result in transformative change that will translate into first generation and low income youths' perceptions of a positive campus climate.

Notwithstanding the number of barriers first generation and low income students face, this study has illustrated that first generation and low income students do report positive achievement-related outcomes and are able to demonstrate significant gains in their grade point averages after participating in McNair. While most research has focused on addressing the needs of students who are struggling academically (Brooks, Jones, & Burt, 2013; Richardson & Skinner, 1992), findings from this study emphasize the importance of a focus on students who may already be doing well academically. Programs tailored towards students who are struggling academically are important, particular those for first generation and low income college students who face greater academic obstacles. Nevertheless, this investigation has demonstrated the need for programmatic efforts targeting those first generation and low income students who are performing well academically. These efforts will be essential to ensure that these youths do not fall through the cracks given that research still demonstrates that this population experiences barriers at the post-baccalaureate level. Specifically, they are reportedly far less likely than their counterparts to attend graduate school, complete graduate level education, and enroll in Ph.D. programs (Ishitani, 2003; Nunez, Cuccaro-Alamin, S., Nuñez, & Carroll, 1998).

Measures must be taken to ensure that supports are not only put in place to protect these youths from the barriers they are more susceptible to encountering, but also to help prepare those youths who are doing well academically for a successful transition from baccalaureate to post baccalaureate level education. Findings from this study illustrate that McNair is essential in helping these youths to experience greater academic-related outcomes. A major goal of the McNair Scholars Program is to address the lack of first

generation and low income college students pursuing graduate level education. Thus, McNair's promotion of greater academic achievement, as indicated by this study's findings of higher GPAs, provides scholars with an enhanced ability to be competitive applicants for graduate school. Creating more formal and structured programmatic opportunities, like McNair, is recommended in order to cultivate more positive achievement outcomes among first generation and low income youth who have been able to excel academically in spite of common barriers. The current investigation contributes to this area of literature by providing evidence that through participation in McNair, low income and first generation college students demonstrate significant gains in their academic performance.

Academic enrichment programs, like McNair, have been dedicated to fostering and improving the academic achievement outcomes of first generation and low income youth. To aid programs like McNair, a deep understanding of what factors influence these youths' academic-related outcomes is important. The current study's exploration of barrier/promotive factors associated with first generation and low income students' academic beliefs, educational expectations, and GPA offers essential empirical knowledge on factors that may promote positive outcomes for first generation and low income youth who participate in McNair. This study contributes to research focused on identifying factors that promote academic success and help first generation and low income youth navigate achievement barriers to achievement. For research and programmatic efforts, this investigation reaffirms the importance of studies and evaluative efforts that extend beyond a focus on performance-based outcomes. In line with previous suggestions (Adeyemo, 2007; Wigfield & Eccles, 1999), future research

and programmatic efforts might consideration a focus on youths' intrinsic motivation, extrinsic motivation, emotional intelligence, or subjective task value. Nevertheless, the current study offers a solid foundation on which future studies exploring achievement-related outcomes may build.

REFERENCES

Adeyemo, D. A. (2007). Moderating influence of emotional intelligence on the link between academic self-efficacy and achievement of university students. *Psychology & Developing Societies*, *19*(2), 199-213.

Advisory Committee on Student Financial Assistance. (2001). Access Denied: Restoring the Nation's Commitment to Equal Educational Opportunity. Washington, DC: Advisory Committee on Student Financial Assistance.

Aiken, L.S., & West, S.G. (1991). Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage.

Awad, G. H. (2007). The role of racial identity, academic self-concept, and self-esteem in the prediction of academic outcomes for African American students. *Journal of Black Psychology*, *33*(2), 188-207.

Bandura, A. (1984). Recycling misconceptions of perceived self-efficacy. *Cognitive Therapy and Research*, *8*(3), 231-255.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

Bandura, A., & Adams, N. E. (1977). Analysis of self-efficacy theory of behavioral change. *Cognitive therapy and research*, *1*(4), 287-310.

Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of applied psychology*, *88*(1), 87.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology*, *41*, 586– 598.

Barton, P. E., & Coley, R. J. (2011). The Mission of the High School: A New Consensus of the Purposes of Public Education? Policy Information Perspective. *Educational Testing Service*.

Bean, J. P. (1990). Why students leave: Insights from research. In D.Hossler (Ed.), *The strategic management of college enrollment* (pp. 147– 169). San Francisco: Jossey-Bass.

Beebe, A., Burgess, T., Carroll, C., & Charlens, E. (2009). A village without borders: Umoja programs level the playing field for African-American students. *Community College Journal*, *79*(5), 34-39.

Bell, M. (2001). Supported reflective practice: a programme of peer observation and feedback for academic teaching development. *International Journal for Academic Development*, *6*(1), 29-39.

Bensimon, E. M. (2007). The underestimated significance of practitioner knowledge in the scholarship on student success. *The Review of Higher Education*, *30*(4), 441-469.

Betz, N. E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. *Journal of counseling psychology*, *28*(5), 399.

Billson, J. M., & Terry, M. B. (1982). In search of the silken purse: Factors in attrition among first-generation students. *College and University*, *58*(1), 57-75.

Blackwell, E. (2014). WHAT ARE THE MOTIVATIONAL FACTORS OF FIRST-GENERATION MINORITY COLLEGE STUDENTS WHO OVERCOME THEIR FAMILY HISTORIES TO PURSUE HIGHER EDUCATION?. *College Student Journal*, *48*(1), 45-56.

Bloom, L. (2009). 'When one person makes it, we all make it': a study of Beyond Welfare, a women-centered community-based organization that helps low-income mothers achieve personal and academic success. *International Journal Of Qualitative Studies In Education (QSE), 22(4),* 485-503.

Bong, M., & Clark, R. E. (1999). Comparison between self-concept and self-efficacy in academic motivation research. *Educational psychologist*, *34*(3), 139-153.

Bong, M., & Skaalvik, E. M. (2003). Academic self-concept and self-efficacy: How different are they really?. *Educational psychology review*, *15*(1), 1-40.

Brady-Amoon, P., & Fuertes, J. N. (2011). Self-Efficacy, Self-Rated Abilities, Adjustment, and Academic Performance. *Journal of Counseling & Development*, *89*(4), 431-438.

Braxton, J. M., & Hirschy, A. S. (2005). Theoretical developments in the study of college student departure. *College student retention: Formula for student success*, *3*, 61-87.

Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). ASHE-ERIC Higher Education Report.

Brooks, M., Jones, C., & Burt, I. (2013). Are African-American Male Undergraduate Retention Programs Successful? An Evaluation of an Undergraduate African-American Male Retention Program. *Journal of African American Studies*, *17*(2), 206-221.

Brooks-Terry, M. (1988). Tracing the disadvantages of first-generation college students: An application of Sussman's option sequence model. In *Family and support systems across the life span* (pp. 121-134). Springer US.

Buchmann, C., & Dalton, B. (2002). Interpersonal influences and educational aspirations in 12 countries: The importance of institutional context. *Sociology of education*, 99-122.

Byrne, B. M. (1984). The general/academic self-concept nomological network: A review of construct validation research. *Review of educational research*, *54*(3), 427-456.

Caraway, K., Tucker, C. M., Reinke, W. M., & Hall, C. (2003). Self-efficacy, goal orientation, and fear of failure as predictors of school engagement in high school students. *Psychology in the Schools*, *40*(4), 417-427.

Chaney, B., Muraskin, L. D., Cahalan, M. W., & Goodwin, D. (1998). Helping the progress of disadvantaged students in higher education: The federal student support services program. *Educational Evaluation and Policy Analysis*, *20*(3), 197-215.

Chemers, M. M., Hu, L. T., & Garcia, B. F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology*, *93*(1), 55.

Choi, N. (2005). Self-efficacy and self-concept as predictors of college students' academic performance. *Psychology in the Schools*, *42*(2), 197-205.

Choy, S. (2001). Students Whose Parents Did Not Go to College: Postsecondary Access, Persistence, and Attainment. Findings from the Condition of Education, 2001.

Cokley, K. (2000). An investigation of academic self-concept and its relationship to academic achievement in African American college students. *Journal of Black Psychology*, *26*(2), 148-164.

Cokley, K. O. (2002). Ethnicity, gender and academic self-concept: A preliminary examination of academic disidentification and implications for psychologists. *Cultural Diversity and Ethnic Minority Psychology*, *8*(4), 378.

Cokley, K. O., & Chapman, C. (2008). The roles of ethnic identity, anti-white attitudes, and academic self-concept in African American student achievement. *Social Psychology of Education*, *11*(4), 349-365.

Cuseo, J. B., Fecas, V. S., & Thompson, A. (2010). *Thriving in college and beyond: Research-based strategies for academic success and personal development.* Kendall Hunt Publishing Company.

Deil-Amen, R. (2011). Socio-academic integrative moments: Rethinking academic and social integration among two-year college students in career-related programs. *The Journal of Higher Education*, *82*(1), 54-91.

Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development*, *46*(3), 223-236.

Donaldson, J. F., & Graham, S. (1999). A model of college outcomes for adults. *Adult Education Quarterly*, *50*(1), 24-40.

Eby, L. T., Rhodes, J. E., & Allen, T. D. (2007). Definition and Evolution of Mentoring. *The Blackwell handbook of mentoring: A multiple perspectives approach*, 7.

Eccles, J. S., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents' achievement task values and expectancy-related beliefs.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual review of psychology*, *53*(1), 109-132.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: the impact of stage-environment fit on young adolescents' experiences in schools and in families. *American psychologist*, *48*(2), 90.

Edman, J. L., & Brazil, B. (2009). Perceptions of campus climate, academic efficacy and academic success among community college students: An ethnic comparison. *Social Psychology of Education*, *12*(3), 371-383.

Ehrenberg, R. G., & Sherman, D. R. (1987). Employment while in college, academic achievement and post-college outcomes: A summary of results.

Elias, S. M., & MacDonald, S. (2007). Using Past Performance, Proxy Efficacy, and Academic Self-Efficacy to Predict College Performance. *Journal of Applied Social Psychology*, *37*(11), 2518-2531.

Engle, J., & Tinto, V. (2008). *Moving beyond access: College success for low-income, first-generation students*. Pell Institute for the Study of Opportunity in Higher Education.

Ferla, J., Valcke, M., & Cai, Y. (2009). Academic self-efficacy and academic self-concept: Reconsidering structural relationships. *Learning and Individual Differences*, *19*(4), 499-505.

Filkins, J. W., & Doyle, S. K. (2002). First Generation and Low Income Students: Using the NSSE Data To Study Effective Educational Practices and Students. Self-Reported Gains. AIR 2002 Forum Paper.

Fordham, S. (1988). Racelessness as a factor in Black students' school success: Pragmatic strategy or pyrrhic victory?. *Harvard Educational Review*, *58*(1), 54-85.

Fordham, S., & Ogbu, J. U. (1986). Black students' school success: Coping with the "burden of 'acting white'". *The urban review*, *18*(3), 176-206.

Foreman, E. A., & Retallick, M. S. (2012). Undergraduate Involvement in Extracurricular Activities and Leadership Development in College of Agriculture and Life Sciences Students. *Journal of Agricultural Education*, *53*(3), 111-123.

Gándara, P., & Mejorado, M. (2005). Putting your money where your mouth is: Mentoring as a strategy to increase access to higher education. *Preparing for college: Nine elements of effective outreach*, 89-110.

Gándara, P., & Mejorado, M. (2005). Putting your money where your mouth is: Mentoring as a strategy to increase access to higher education. *Preparing for college: Nine elements of effective outreach*, 89-110.

Gandara, P., & National Postsecondary Education, C. e. (2001). Paving the Way to Postsecondary Education: K-12 Intervention Programs for Underrepresented Youth. Report of the National Postsecondary Education Cooperative Working Group on Access to Postsecondary Education.

Garcia, V. (2015). First-generation college students: How extracurricular involvement can assist with success. *The Vermont Connection, 31*(1), 6.

Garriott, P. O., Flores, L. Y., & Martens, M. P. (2013). Predicting the math/science career goals of low-income prospective first-generation college students. *Journal Of Counseling Psychology, 60*(2), 200-209.

Gerardi, S. (1990). Academic self-concept as a predictor of academic success among minority and low-socioeconomic status students. *Journal of College Student Development*.

Gerardi, S. (2005). Self-concept of ability as a predictor of academic success among urban technical college students. *The Social Science Journal, 42*(2), 295-300.

Gerardi, S. (2006). Positive college attitudes among minority and low-income students as an indicator of academic success. *The Social Science Journal, 43*(1), 185-190.

Girves, J. E., Zepeda, Y., & Gwathmey, J. K. (2005). Mentoring in a post-affirmative action world. *Journal of Social Issues, 61*(3), 449-479.

Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management review, 17(2),* 183-211.

Gloria, A. M., Robinson Kurpius, S. E., Hamilton, K. D., & Willson, M. S. (1999). African American students' persistence at a predominantly White university: Influences of social support, university comfort, and self-beliefs. *Journal of College Student Development, 40,* 257– 268.

Goza, F., & Ryabov, I. (2009). Adolescents' educational outcomes: Racial and ethnic variations in peer network importance. *Journal of youth and adolescence, 38*(9), 1264-1279.

Gregg, N. (2007). Underserved and unprepared: Postsecondary learning disabilities. *Learning Disabilities Research & Practice, 22*(4), 219-228

Hahs-Vaughn, D. (2004). The impact of parents' education level on college students: An analysis using the beginning postsecondary students longitudinal study 1990-92/94. *Journal of College Student Development, 45*(5), 483-500.

Hall, C., Smith, K., & Chia, R. (2008). Cognitive and Personality Factors in Relation to Timely Completion of a College Degree. *College Student Journal, 42*(4).

Hall, S. P., & Brassard, M. R. (2008). Relational support as a predictor of identity status in an ethnically diverse early adolescent sample. *The Journal of Early Adolescence*, *28*(1), 92-114.

Heller, D. E. (2001). The states and public higher education policy: Affordability, access, and accountability. JHU Press.

Heller, D. E. (Ed.). (2001). *The states and public higher education policy: Affordability, access, and accountability*. JHU Press.

Hellman, C. M. (1996). Academic Self Efficacy: Highlighting the First Generation Student. Journal of Applied Research in the Community College, 4(1), 69-75
.

Hellman, C., & Harbeck, D. (1997). Academic Self-Efficacy: Highlighting the First-Generation Student. *Journal of Applied Research in the Community College, 4(2)*, 165-69.

Hertel, J. B. (2010). College student generational status: Similarities, differences, and factors in college adjustment. *The Psychological Record, 52(1),* 1.

Hoffman, N. (2003). College Credit in High School: Increasing College Attainment Rates for Underrepresented Students. *Change: The Magazine of Higher Learning, 35(4),* 42-48.

Hong, B. S., Shull, P. J., & Haefner, L. A. (2011). Impact of perceptions of faculty on student outcomes of self-efficacy, locus of control, persistence, and commitment. *Journal of College Student Retention: Research, Theory and Practice*, *13*(3), 289-309.

Hong, B. S., Shull, P. J., & Haefner, L. A. (2012). Impact of Perceptions of Faculty on Student Outcomes of Self-Efficacy, Locus of Control, Persistence, and Commitment. *Journal Of College Student Retention: Research, Theory & Practice, 13(3),* 289-309.

Horvat, E. M., & Lewis, K. S. (2003). Reassessing the" burden of acting White"': The importance of peer groups in managing academic success. *Sociology of education*, 265-280.

Hudley, C., Graham, S., & Taylor, A. (2007). Reducing aggressive behavior and increasing motivation in school: The evolution of an intervention to strengthen school adjustment. *Educational Psychologist*, *42*(4), 251-260.

Isakson, K., & Jarvis, P. (1999). The adjustment of adolescents during the transition into high school: A short-term longitudinal study. *Journal of Youth and Adolescence*, *28*(1), 1-26.

Ishitani, T. T. (2003). A longitudinal approach to assessing attrition behavior among first-generation students: Time-varying effects of pre-college characteristics. *Research in higher education*, *44*(4), 433-449.

Ishiyama. J. T., and Hopkins., V.M. (2003) "Assessing the Impact of a Graduate School Preparation Program on First-Generation, Low-Income College Students at a Public Liberal Arts University." *Journal of College Student Retention* 4, 393-405.

James, D. W., Jurich, S., & Estes, S. (2001). Raising minority academic achievement. In *Washington, DC: American Youth Policy Forum*.

Kaczmarek, P. G., Matlock, C. G., & Franco, J. N. (1990). Assessment of college adjustment in three freshman groups. *Psychological Reports*, *66*(3c), 1195-1202.

Kahlenberg, R. D. (Ed.). (2004). *America's untapped resource: Low-income students in higher education*. Twentieth Century Fund.

Kaplan, A., Lichtinger, E., & Margulis, M. (2011). The situated dynamics of purposes of engagement and self-regulation strategies: A mixed-methods case study of writing. *Teachers College Record*, *113*(6).

Karakos, H. L. (2014). Positive peer support or negative peer influence? The role of peers among adolescents in recovery high schools. *Peabody Journal of Education*, *89*(2), 214-228.

Karcher, M. J., Davis III, C., & Powell, B. (2002). The Effects of Developmental Mentoring on Connectedness and Academic Achievement. *The School Community Journal*. Vol 12(2), 2002, 35-50.

King, K. A., Vidourek, R. A., Davis, B., & McClellan, W. (2002). Increasing self-esteem and school connectedness through a multidimensional mentoring program. *Journal of School Health*, *72*(7), 294-299.

Kitsantas, A., Winsler, A. & Huie, F. (2009). Self-regulation and ability predictors of academic success during college: A predictive validity study. *Journal of Advanced Academics 20(1)*, 42–68.

Kuh, G. D. (2007). What student engagement data tell us about college readiness. *Peer Review*, *9*(1), 4-8.

Lam, P. C., Srivatsan, T., Doverspike, D., Vesalo, J., & Mawasha, P. R. (2005). A ten year assessment of the pre-engineering program for under-represented, low income and/or first generation college students at the University of Akron. *Journal of STEM Education: Innovations and Research,6(3/4)*, 14.

Latino, J. A., & Unite, C. M. (2012). Providing academic support through peer education. *New Directions for Higher Education*, *2012*(157), 31-43.

Lent, R. W., Brown, S. D., & Gore Jr, P. A. (1997). Discriminant and predictive validity of academic self-concept, academic self-efficacy, and mathematics-specific self-efficacy. *Journal of Counseling Psychology*, *44*(3), 307.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of vocational behavior*, *45*(1), 79-122.

Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of counseling psychology*, *47*(1), 36.

Lent, R.W., Brown, S.D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. Journal of Vocational Behavior, 45, 79–122

Linnenbrink, E. A., & Pintrich, P. R. (2003). THE ROLE OF SELF-EFFICACY BELIEFS INSTUDENT ENGAGEMENT AND LEARNING INTHECLASSROOM. *Reading &Writing Quarterly*, *19*(2), 119-137.

Locks, A. M., Hurtado, S., Bowman, N. A., & Oseguera, L. (2008). Extending notions of campus climate and diversity to students' transition to college. *The Review of Higher Education*, *31*(3), 257-285.

Longwell-Grice, R., & Longwell-Grice, H. (2008). Testing Tinto: How Do Retention Theories Work for First-Generation, Working-Class Students?. *Journal of College Student Retention: Research, Theory & Practice*, *9*(4), 407-420.

Lynch, A. D., Lerner, R. M., & Leventhal, T. (2013). Adolescent academic achievement and school engagement: An examination of the role of school-wide peer culture. *Journal of youth and adolescence*, *42*(1), 6-19.

Lyons, J. S., Perrotta, P., & Hancher-Kvam, S. (1988). Perceived social support from family and friends: *Measurement across disparate samples. Journal of Personality Assessment, 52(1),* 42-47.

Majer, J. M. (2009). Self-efficacy and academic success among ethnically diverse first-generation community college students. *Journal of Diversity in Higher Education*, *2*(4), 243.

Marsh, H. W., & Martin, A. J. (2011). Academic self-concept and academic achievement: Relations and causal ordering. *British Journal of Educational Psychology*, *81*(1), 59-77.

Marsh, H. W., Trautwein, U., Lüdtke, O., Köller, O., & Baumert, J. (2005). Academic self-concept, interest, grades, and standardized test scores: reciprocal effects models of causal ordering. *Child development*, *76*(2), 397-416.

McCarron, G. P., & Inkelas, K. K. (2006). The gap between educational aspirations and attainment for first-generation college students and the role of parental involvement. *Journal of College Student Development*, *47*(5), 534-549.

McConnell, P. J. (2000). ERIC Review: What community colleges should do to assist first-generation students. *Community College Review*, *28*(3), 75-87.

McDonough, P. M. (1997). *Choosing colleges: How social class and schools structure opportunity*. Suny Press.

McKinney, K. (2010). *Enhancing learning through the scholarship of teaching and learning: The challenges and joys of juggling* (Vol. 139). John Wiley & Sons.

McMillan, J. (2005). Course change and attrition from higher education. Longitudinal Surveys of Australian Youth: Research Report No. 40. Camberwell, Australia: Australian Council for Educational Research.

Micari, M., & Pazos, P. (2012). Connecting to the Professor: Impact of the Student–Faculty Relationship in a Highly Challenging Course. *College Teaching*, *60*(2), 41-47.

Micari, M., & Pazos, P. (2012). Connecting to the Professor: Impact of the Student-Faculty Relationship in a Highly Challenging Course. *College Teaching, 60(2),* 41-47.

Moreno, S. E., & Muller, C. (1999). Success and diversity: The transition through first-year calculus in the university. *American Journal of Education-Chicago*, *108*(1), 30-57.

Mortenson, T. (2001). Trends in college participation by family income, 1970 to 1999. *Postsecondary Education Opportunity*, *106*, 1-8.

Mortenson, T. (2005). Family income and higher education opportunity 1970 to 2003. *Postsecondary Education Opportunity, 1-16.*

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of counseling psychology*, *38*(1), 30.

Myers, C. B., Brown, D. E., & Pavel, D. (2010). Increasing Access to Higher Education Among Low-Income Students: The Washington State Achievers Program. *Journal of Education* For Students Placed At Risk, 15(4), 299-321

Negga, F., Applewhite, S., & Livingston, I. (2007). African American college students and stress: School racial composition, self-esteem and social support. *College Student Journal, 41(4),* 823

Nonis, S. A., & Hudson, G. I. (2006). Academic performance of college students: Influence of time spent studying and working. *Journal of Education for Business*, *81*(3), 151-159.

Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and dis-crimination on the adjustment of minority students to college. *Journal of Higher Education, 67,* 119-148.

Nunez, A. M., Cuccaro-Alamin, S., Nuñez, A. M., & Carroll, C. D. (1998).*First-generation students undergraduates whose parents never enrolled in postsecondary education*. DIANE Publishing.

Olenchak, F. R., & Hebert, T. P. (2002). Endangered Academic Talent: Lessons Learned from Gifted First-Generation College Males. *Journal of College Student Development*, *43*(2), 195-212.

Osborne, J. W. (1997). Race and academic disidentification. *Journal of Educational Psychology*, *89*(4), 728.

Osborne, J. W., Walker, C., & Rausch, J. L. (2002). Identification with Academics, Academic Outcomes, and Withdrawal from School in High School Students: Is There a Racial Paradox?.

Owen, S. V., & Froman, R. D. (1988). *Development of a college academic self-efficacy scale*. ERIC Clearinghouse.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of educational research*, *66*(4), 543-578.

Pajares, F., & Schunk, D. (2001). The development of academic self-efficacy. *Development of achievement motivation. United States*.

Pajares, F., & Schunk, D. H. (2002). Self and self-belief in psychology and education: A historical perspective. *Improving academic achievement: Impact of psychological factors on education*, 3-21.

Pan, W., Guo, S., Alikonis, C., & Bai, H. (2008). Do intervention programs assist students to succeed in college?: A multilevel longitudinal study. *College student journal*, *42*(1), 90.

Parks-Yancy, R. (2012). Interactions into opportunities: Career management for low-income, first-generation African American college students. *Journal of College Student Development*, *53*(4), 510-523. doi:10.1353/csd.2012.0052

Pascarella, E. T., & Blimling, G. S. (1996). Students' out-of-class experiences and their influence on learning and cognitive development: A literature review. *Journal of college student development*, *37*(2), 149-162.

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-Generation College Students: Additional Evidence on College Experiences and Outcomes. *Journal Of Higher Education*, *75*(3), 249.

Paulsen, M. B., & St John, E. P. (2002). Social class and college costs: Examining the financial nexus between college choice and persistence. *The Journal of Higher Education*, *73*(2), 189-236.

Penrose, A. M. (2002). Academic Literacy Perceptions and Performance: Comparing First-Generation and Continuing-Generation College Students. Research In The Teaching Of English, 36(4), 437-61.

Phinney, J. S., & Haas, K. (2003). The process of coping among ethnic minority first-generation college freshmen: A narrative approach. *The Journal of Social Psychology*, *143*(6), 707-726.

Pike, G. R., & Kuh, G. D. (2005). First-and second-generation college students: A comparison of their engagement and intellectual development. *Journal of Higher Education*, 276-300.

Pratt, P. A., & Skaggs, C. T. (1989). First Generation College Students: Are They at Greater Risk for Attrition than Their Peers?. *Research in Rural Education*, *6*(2), 31-34.

Procidano, M. E., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. *American journal of community psychology*, *11*(1), 1-24.

Prospero, M., & Vohra-Gupta, S. (2007). First generation college students: Motivation, integration, and academic achievement. *Community College Journal of Research and Practice*, *31*(12), 963-975.

Purswell, K. E., Yazedjian, A., & Toews, M. L. (2008). Students' Intentions and Social Support as Predictors of Self-Reported Academic Behaviors: A Comparison of First-and Continuing-Generation College Students. *Journal of College Student Retention: Research, Theory & Practice*, *10*(2), 191-206.

Quian, Z., & Sampson L.B. (1999). "Racial/Ethnic Differences in Educational Aspirations of High School Seniors." *Sociological Perspectives 42*: 605-25.

Ramos-Sanchez, L., & Nichols, L. (2007). Self-efficacy of first-generation and non-first-generation college students: The relationship with academic performance and college adjustment. *Journal of College Counseling, 10(1),* 6-19.

Riehl, R.J. (1994). The academic preparation, aspirations, and first-year performance of first-generation students. *Coll.Univ 70,* 14-9

Reynolds, A. J., Temple, J. A., Robertson, D. L., & Mann, E. A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income children in public schools. *Journal of the American Medical Association*, *285*, 2339– 2346.

Reynolds, W. M., Ramirez, M. P., Magriña, A., & Allen, J. E. (1980). Initial development and validation of the academic self-concept scale. *Educational and Psychological Measurement*, *40*(4), 1013-1016.

Richardson, R., & Skinner, E. (1992). Helping first-generation minority students achieve degrees. *New Directions for Community Colleges, 80,* 29-43.

Rots, I., Aelterman, A., Vlerick, P., & Vermeulen, K. (2007). Teacher education, graduates' teaching commitment and entrance into the teaching profession. *Teaching and Teacher Education*, *23*(5), 543-556.

Schepens, A., Aelterman, A., & Vlerick, P. (2009). Student teachers' professional identity formation: between being born as a teacher and becoming one. *Educational Studies*, *35*(4), 361-378.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational psychologist*, *26*(3-4), 207-231.

Schunk, D., Pintrich, P., & Meece, J. (2008). *Motivation in education: Theory, research, and applications*.

Schwartz, R. A., & Washington, C. M. (2002). Predicting academic performance and retention among African American freshmen men.*NASPA JOURNAL*, *39*(4), 354-370.

Sewell, W. H., Hauser, R. M., & Wolf, W. C. (1980). Sex, schooling, and occupational status. *American Journal of Sociology*, *86*(3), 551.

Shavelson, R. J., & Bolus, R. (1982). Self concept: The interplay of theory and methods. *Journal of educational Psychology*, *74*(1), 3.

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of educational research*, 407-441.

Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, *55*(4), 1721-1731.

Shelton, E. N. (2003). Faculty support and student retention. The Journal of nursing education, 42(2), 68-76.

Siegel, R. G., Galassi, J. P., & Ware, W. B. (1985). A comparison of two models for predicting mathematics performance: Social learning versus math aptitude–anxiety. *Journal of Counseling Psychology*, *32*(4), 531.

Skaalvik, E. M., & Rankin, R. J. (1996). Self-concept and self-efficacy: Conceptual analysis. In *annual meeting of the American Educational Research Association, New York*.

Slavin, R. E., & Madden, N. A. (2006). Reducing the gap: Success for all and the achievement of African American students. *The Journal of Negro Education*, 389-400.

Spaights, E., Kenner, D., & Dixon, H. (1986). The relationship of self-concept and the academic success of Black students in White institutions of higher education. *Journal of Instructional Psychology*. 13(3), 111-121.

Stake, J. E., & Mares, K. R. (2001). Science enrichment programs for gifted high school girls and boys: Predictors of program impact on science confidence and motivation. *Journal of Research in Science Teaching*, *38*(10), 1065-1088.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American psychologist*, *52*(6), 613.

Strayhorn, T. L. (2006). Factors influencing the academic achievement of first-generation college students. *NASPA Journal*, *43*(4).

Tardy, C. H. (1985). Social support measurement. *American Journal of Community Psychology*, *13*(2), 187-202.

Terenzini, P. T. (1993). On the nature of institutional research and the knowledge and skills it requires. *Research in Higher Education*, *34*(1), 1-10.

Terenzini, P. T., Cabrera, A. F., & Bernal, E. M. (2001). Swimming against the tide: The poor in American higher education.

Terenzini, P. T., Rendon, L. I., Upcraft, M. L., Millar, S. B., Allison, K. W., Gregg, P. L., & Jalomo, R. (1994). The transition to college: Diverse students, diverse stories. *Research in Higher Education*, *35*(1), 57-73.

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher education*, *37*(1), 1-22.

Terenzini, P. T., Yaeger, P. M., Bohr, L., Pascarella, E. T., & Amaury, N. (1997). African American College Students' Experiences in HBCUs and PWIs and Learning Outcomes.

Tierney, W. G., Corwin, Z. B., & Colyar, J. E. (Eds.). (2005). *Preparing for college: Nine elements of effective outreach*. SUNY Press.

Ting, S. (2003). A Longitudinal Study of Non-Cognitive Variables in Predicting Academic Success of First-Generation College Students. College And University, 78(4), 27-31.

Tinto, V. (1987). Leaving college: Rethinking the causes and cures of student attrition.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2d ed.) Chicago, IL: University of Chicago Press.

Tinto, V. (1998). Learning Communities and the Reconstruction of Remedial Education in Higher Education, A paper delivered at the National Center for Postsecondary Improvement, Stanford University.

Tracey, T. J., & Sedlacek, W. E. (1982). Non-Cognitive Variables in Predicting Academic Success by Race.

U.S. Department of Health and Human Services. (2013). Federal Register, 78(16), 5182-5183.

Vuong, M., Brown-Welty, S., & Tracz, S. (2010). The effects of self-efficacy on academic success of first-generation college sophomore students. *Journal of college student development*, *51*(1), 50-64.

Warburton, E. C., Bugarin, R., & Nunez, A. M. (2001). Bridging the Gap: Academic Preparation and Postsecondary Success of First-Generation Students. Statistical Analysis Report. Postsecondary Education Descriptive Analysis Reports.

Wei, C. C., Horn, L., & Carroll, C. D. (2002). *Persistence and attainment of beginning students with Pell Grants*. US Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.

Weidman, J. C. (1985). Retention of Nontraditional Students in Postsecondary Education.

Whaley, A. L., & Noel, L. (2013). Academic Achievement and Behavioral Health among Asian American and African American Adolescents: Testing the Model Minority and Inferior Minority Assumptions. Social Psychology of Education: An International Journal, 16(1), 23-43.

White, J. W., & Ali-Khan, C. (2013). The Role of Academic Discourse in Minority Students' Academic Assimilation. American Secondary Education, 42(1), 24-42.

Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary educational psychology*, *25*(1), 68-81.

Wigfield, A., & Karpathian, M. (1991). Who am I and what can I do? Children's self-concepts and motivation in achievement situations. *Educational Psychologist*, *26*(3-4), 233-261.

Witherspoon, K. M., Speight, S. L., & Thomas, A. J. (1997). Racial identity attitudes, school achievement, and academic self-efficacy among African American high school students. *Journal of Black Psychology*, *23*(4), 344-357.

Wolf, A. (2003). Does education matter? Myths about Education and Economic Growth.

Zalaquett, C. P. (1999). Do students of noncollege-educated parents achieve less academically than students of college-educated parents? Psychological Reports, 85(2), 417-421.

Zhang, Y., Fei, Q., Quddus, M., & Davis, C. (2014). An Examination of the Impact of Early Intervention on Learning Outcomes of At-Risk Students. *Research In Higher Education Journal, 26*

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into practice, 41*(2), 64-70.

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. American educational research journal, 29(3), 663-676.

APPENDIX A

IRB APPROVAL

![University of South Carolina logo]

UNIVERSITY OF
SOUTH CAROLINA

July 23, 2014

Ms. Melanie Avery
College of Arts & Sciences
Department of Psychology
1521 Pendelton St
Coulmbia, SC 29210

Re: **Pro00036620**
Study Title: *Promoting Positive Academic Beliefs and Performance: Exploring the Impact of Academic Enrichment Programs*

FYI: University of South Carolina Assurance number: FWA 00000404 / IRB Registration number: 00000240

Dear Ms. Avery:

In accordance with 45 CFR 46.101(b)(**2**), the referenced study received an exemption from Human Research Subject Regulations on **7/21/2014**. No further action or Institutional Review Board (IRB) oversight is required, as long as the project remains the same. However, you must inform this office of any changes in procedures involving human subjects. Changes to the current research protocol could result in a reclassification of the study and further review by the IRB.

Because this project was determined to be exempt from further IRB oversight, consent document(s), if applicable, are not stamped with an expiration date.

Research related records should be retained for a minimum of three years after termination of the study.

The Office of Research Compliance is an administrative office that supports the USC Institutional Review Board. If you have questions, please contact Arlene McWhorter at arlenem@sc.edu or (803) 777-7095.

Sincerely,

Lisa M. Johnson
IRB Manager

APPENDIX B

APPROVAL LETTER FROM TRIO

UNIVERSITY OF
SOUTH CAROLINA

Letter of Approval
May, 2014

Dear Melanie Avery,

Thank you for your interest in soliciting the McNair scholars to participate in your dissertation research entitled: "**Promoting Positive Academic Beliefs and Outcomes: Exploring the Impact of Academic Enrichment Programs**".

Based on our conversation, we think that findings from your study will be helpful to our ongoing program evaluation. Therefore, we have approved your request to solicit the McNair scholars from the University of South Carolina. If you have any question, please feel free to contact me.

Sincerely,

Paul Beasley Ph.D.

Director, USC TRIO

APPENDIX C

LIST OF MEASURES BY CONSTRUCT

Construct	Measure
Academic Self-Efficacy	College Academic Self-Efficacy Scale (CASES; Owen & Froman, 1988
Academic Self-Concept	Academic Self-Concept Survey (ASCS; Reynolds, Ramirez, Magrina, & Allen, 1980)
Educational expectations	*Researcher Developed*
Academic Performance	Current GPA
Peer Support	Perceived Social Support Inventory (PSSI; Procidano & Heller, 1983)
Faculty Support	Perceived Faculty Support Scale (Shelton, 2003)
Performance/ Strategy Feedback	*Researcher Developed*
Extracurricular Involvement	*Researcher Developed*
Campus Climate	Adapted from the Classroom Environment Scale (Trickett & Moos,1973)
Family Support	Multidimensional Support Scale (MDSS; Winefield, Winefirls, & Tiggemann, 1992)
Demographic Questions	Age, Gender, Ethnic Identity, Marital Status, Children, Current Major, Work Status, & Enrollment Status

APPENDIX D

LETTER TO PARTICIPANTS

STUDY INTRODUCTORY LETTER

Dear Student,

My name is Melanie Avery and I am a doctoral student in the Clinical Community Psychology program at the University of South Carolina. Under the direction of Dr. Shauna Cooper in the Psychology department, I am currently working on my dissertation exploring contextual factors that influence students' academic attitudes. With your assistance, educators and higher institutional administrators can use information from my study to improve existing services for first generation, low income, and underrepresented college students and perhaps implement new services. If you agree to participate, please clink on the link below and you will be directed to a page where you will need to check a box indicating that you consent to participation in the survey. You then will be able to complete the survey and be entered in a drawing to win one of one of two $50.00 visa gift cards. The survey should take no longer than 15-20 minutes of your time. The name and email contact information you provide will be used to contact you if you have won a gift card.

Your participation in the study is solely voluntarily and will not have any impact on your current enrollment or academic standing at the college. Participants' names and personal identifying information will be kept anonymous and answers kept confidential. Participants may receive a copy of the study results upon request. Participants have the right to withdraw from the study at any time without penalty or adverse actions against them. If you are interested in participating, please clink on the embed link below and review the informed consent. If you have any additional questions or concerns related to the study, feel free to contact me as well.

Thank you for your time and consideration.

Melanie Avery M.A.
averymMcNair Scholars Programemail.sc.edu
803-935-5714

APPENDIX E

INFORMED CONSENT

INFORMED CONSENT FORM

You are invited to participate in the *College Students Academic Perception* study. We ask that you read this form before you provide consent to participate in this survey. This study is being conducted by: Melanie Avery, Principal Investigator, Department of Psychology, University of South Carolina.

Background Information:
The purpose of this study is to explore contextual factors that influence first generation and low income college students' achievement-related outcomes.

Procedures:
If you agree to be in this study, we would ask you to do the following things: Participants will be provided a link in the solicitation email. After you have read over this consent form, if you consent to participating in this study please click on the link embedded. You will be required to check a box once beginning the survey to confirm that you have given consent to participant. After consenting, you will be directed to the web based survey. Participants will be asked to complete a demographic survey questionnaire with information related to household information and other information on your education attainment. Participants will then complete a battery of questionnaires tapping into their academic-related attitudes. The entire survey should take approximately thirty minutes to complete. All information will be de-identified and kept completely anonymous.

Risks of being in the Study:
Risks to participating in this research study may include discomfort from providing information related to college perceptions while currently enrolled on the college campus where the research is conducted. With this concern participants will have the opportunity, at any time, to withdraw from the study. Moreover, all participants should be aware that involvement in this study will have no bearing on academic records or college enrollment and that their involvement is purely voluntary. Participants should be aware that records obtained in this study will be kept private. In any sort of report that might be published, researchers will not include any information that will make it possible to identify a participant.

Benefits of being in the Study:
The benefits to participating in this study would include helping researchers and educators understand factors that play an important role in influencing academic success among college students. Through this understanding, the development of new or improved academic programs can be established to help future students. Other benefits may include additional funding to support the establishment of programs that cater to the academic needs of first generation and low income college students.

Compensation: All participants who complete this study will be entered in a drawing to win one of two $50.00 dollar visa gift cards.

Confidentiality:
Research records will be stored securely and only the researcher will have access to the records.
All information obtained from participants will be kept in a secured location that does not allow public access. Data collected within this study will remain confidential.

Voluntary Nature of the Study:
Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of South Carolina or Winthrop University. If you decide to participate you may withdraw at any time without affecting relationships with your Institution.

Contacts and Questions:
The researcher conducting this study is Melanie Avery. You may email or call me if you have any questions before you begin the survey. If you have questions later, **you are encouraged** to contact me at 803-935-7796 or email averymMcNair Scholars Programemail.sc.edu or you may contact the Research Advisor, Dr. Shauna Cooper Psychology Department, University of South Carolina 803)777-6859 or email smcooperMcNair Scholars Programsc.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Institutional Review Board, Thomas A. Coggins, Chair, at tcogginsMcNair Scholars Programmailbox.sc.edu.

If you consent to participate in the current study please clink the link below and print a copy of this information to keep for your records.

Statement of Consent:
By clicking the link below you are giving your consent to participate in the current study.

APPENDIX F

COLLEGE STUDENTS' PERCEPTION SURVEY

College Students' Perceptions Study

Demographic Data

1. How did you find out about McNair?
    University Website
    Friend
    Faculty Member
    Flyer
    Other (Please Specify _____)

2. How many years have you participated in the McNair Scholars Program?
    1st
    2nd
    3rd
    4th +

3. How important were financial incentives, if any, to your decision to apply to McNair?
    Not important
    Somewhat important
    Very important

4. Have you conducted research outside of the McNair Scholars Program?
    Yes
    No

5. Do you enjoy conducting research?
    Yes
    No

6. Do you plan to pursue a career that involves conducting research?
    Yes
    No

7. How satisfied were you with:

	Very Unsatisfied	Unsatisfied	Satisfied	Very Satisfied
1. your relationship with your summer research mentor?	☐	☐	☐	☐
2. your summer research mentor's ability to attend to your research needs?	☐	☐	☐	☐
3. the amount of time you spent with your summer research mentor?	☐	☐	☐	☐
4. feedback from your summer faculty mentor?	☐	☐	☐	☐

8. Has any members of your immediate family received a degree from a 4 year college?
      Yes
       No

9. Do you receive any of the following financial aid:
                Yes   No
Pell Grants
Student Loans
Scholarships

10. Age: _____

11. Gender:
      Female
       Male
      Other (please specify _____)

12. How do you identify yourself in terms of racial/ethnic group?

      American Indian or Alaskan Native
      Black, not of Hispanic origin
      Hispanic or Latino

White, not of Hispanic origin

Asian or Pacific Islander

Other (Please Specify_____)

13. Marital status:

Married

Single

Divorced

Separated

Widowed

14. Number of children: _____

15. If applicable, age of children: _____

16. Are you current employed (other than McNair)?

Yes

No

17. If yes, on average how many hours do you work weekly?

0- 5

6-10

11- 15

16- 20

21- 25

26- 30

31- 35

36- 40

41+

18. How many credits are you taking for the current semester?

0-6

7-12

13+

19. Current major:_____

20. Current minor: _____

21. What was your cumulative high school Grade Point Average (GPA)? _____ GPA
(use   4.0-0.0 scale)

22. What is your current cumulative Grade Point Average (GPA)? _____ GPA (use
4.0-0.0 scale)

23. Do you plan to go to Graduate School immediately after you graduate?
    Yes
    No

24. If no, how long do you expect to take off before you go to Graduate School?
    I have decided not to attend graduate school
    1 year
    2 years
    3 years
    4+ years

25. What is the highest degree you plan to pursue?
    Bachelor's Degree
    Master's Degree
    Juris Doctor Degree (e.g., law school)
    Medical Degree
    Ph.D.
    Other (please specify _____)

26. Do you currently have someone in your life that you consider a mentor?
    Yes
    No

27. If yes, what is your relationship with your mentor?
    Parent/ Guardian
    McNair Faculty
    Non-McNair Faculty
    Senior student
    Friend
    Other (please specify_____)

28. EDUCATIONAL EXPECTATIONS MEASURE
Answer the following questions about your educational expectations:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I expect to receive my bachelor's degree.		☐	☐	☐	☐
2. I expect to apply to graduate school.		☐	☐	☐	☐
3. I expect to be accepted to graduate school.	☐	☐	☐	☐	☐
4. I expect to complete graduate school.		☐	☐	☐	☐

29. EXTRACURRICULAR ACTIVITY/INVOLVEMENT MEASURE

About how many hours do you spend in a typical 7-day week doing each of the following?

	0	1-5	6-10	11-20	21-30	31-40	+40
1. Preparing for class alone (studying, reading, writing, rehearsing, doing homework, or other activities related to your program).		☐	☐	☐	☐	☐	☐
2. Participating in non college-sponsored activities with McNair peers (sporting events, movies, fairs).		☐	☐	☐	☐	☐	☐
3. Participating in non college-sponsored activities with **non**-McNair peers (sporting events, movies, fairs).	☐	☐	☐	☐	☐	☐	☐
4. Participating in college-sponsored activities with McNair peers		☐	☐	☐	☐	☐	☐

(organizations, campus publications, student government, intercollegiate or intramural sports, etc).					
5. Participating in college-sponsored activities with **non**-McNair peers (organizations, campus publications, student government, intercollegiate or intramural sports, etc).	☐	☐	☐	☐	☐	☐

30. Now, please indicate your level of involvement in each of the following activities:

	Not Engaged	A little engaged	Moderately Engaged	Very Engaged	N/A
1. Preparing for class alone (studying, reading, writing, rehearsing, doing homework, or other activities related to your program).		☐	☐	☐	☐
2. Participating in non-college sponsored activities with McNair peers (sporting events, movies, fairs).		☐	☐	☐	☐
3. Participating in non-college sponsored activities with **non**-McNair peers (sporting events, movies, fairs).	☐	☐	☐	☐	☐
4. Participating in college-sponsored activities with McNair peers (organizations, campus publications, student government, intercollegiate or intramural sports, etc).		☐	☐	☐	☐
5. Participating in college-sponsored activities with **non**-McNair peers		☐	☐	☐	☐

(organizations, campus publications, student government, intercollegiate or intramural sports, etc).					

31. FACULTY SUPPORT SCALE
Please answer the following questions with respect to faculty within the McNair Scholars Program.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. McNair faculty know if students understand what is being taught.					
2. McNair faculty demonstrate respect for students					
3. McNair faculty set challenging but attainable goals for students.					
4. McNair faculty acknowledge when students have done well.					
5. McNair faculty are helpful in new situations without taking over.					
6. McNair faculty stress important concepts.					
7. McNair faculty are approachable.					
8. McNair faculty correct students without belittling them.					

9. McNair faculty listen to students.					
10. McNair faculty can be trusted.					
11. McNair faculty provide helpful feedback on student assignments.					
12. McNair faculty are open to different points of view.					
13. McNair faculty encourage students to ask questions.					
14. McNair faculty provide help outside of class.					
15. McNair faculty vary teaching methods to meet student needs.					
16. McNair faculty make expectations clear.					
17. McNair faculty are patient with students.					
18. McNair faculty are good role models for students.					
19. McNair faculty are realistic in expectations.					
20. McNair faculty present information clearly.					
21. McNair faculty clarify information that is not understood.					

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
22. McNair faculty have a genuine interest in students.					
23. McNair faculty provide study guides and written materials.					
24. McNair faculty demonstrate confidence in students.					

32. Please answer the following questions with respect to general University faculty:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. General faculty know if students understand what is being taught.					
2. General faculty demonstrate respect for students					
3. General faculty set challenging but attainable goals for students.					
4. General faculty acknowledge when students have done well.					
5. General faculty are helpful in new situations without taking over.					
6. General faculty stress important concepts.					
7. General faculty are approachable.					

8. General faculty correct students without belittling them.					
9. General faculty listen to students.					
10. General faculty can be trusted.					
11. General faculty provide helpful feedback on student assignments.					
12. General faculty are open to different points of view.					
13. General faculty encourage students to ask questions.					
14. General faculty provide help outside of class.					
15. General faculty vary teaching methods to meet student needs.					
16. General faculty make expectations clear.					
17. General faculty are patient with students.					
18. General faculty are good role models for students.					
19. General faculty are realistic in expectations.					
20. General faculty present information clearly.					

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	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21. General faculty clarify information that is not understood.					
22. General faculty have a genuine interest in students.					
23. General faculty provide study guides and written materials.					
24. General faculty demonstrate confidence in students.					

33. PEER SUPPORT SCALE Please answer the following questions as they relate specifically to your MCNAIR PEERS.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1) My McNair friends give me the moral support I need.	☐	☐	☐	☐	☐
2) Most other people are closer to their McNair friends than I am.	☐	☐	☐	☐	☐
3) My McNair friends enjoy hearing about what I think.	☐	☐	☐	☐	☐
4) Certain McNair friends come to me when they have problems or need advice.	☐	☐	☐	☐	☐
5) I rely on my McNair friends for emotional support.	☐	☐	☐	☐	☐

6) If I felt that one or more of my McNair friends were upset with me, I'd just keep it to myself.	☐	☐	☐	☐	☐
7) I feel that I'm on the fringe in my circle of McNair friends.	☐	☐	☐	☐	☐
8) There is a McNair friend I could go to if I were just feeling down, without feeling funny about it later.	☐	☐	☐	☐	☐
9) My McNair friends and I are very open about what we think about things.	☐	☐	☐	☐	☐
10) My McNair friends are sensitive to my personal needs.	☐	☐	☐	☐	☐
11) My McNair friends come to me for emotional support.	☐	☐	☐	☐	☐
12) My McNair friends are good at helping me solve problems.	☐	☐	☐	☐	☐
13) I have a deep sharing relationship with a number of McNair friends.	☐	☐	☐	☐	☐
14) My McNair friends get good ideas about how to do things or make things from me.	☐	☐	☐	☐	☐
15) When I confide in McNair friends, it makes me feel uncomfortable.	☐	☐	☐	☐	☐

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16) My McNair friends seek me out for companionship.	☐	☐	☐	☐	☐
17) I think that my McNair friends feel that I'm good at helping them solve problems.	☐	☐	☐	☐	☐
18) I don't have a relationship with a McNair friend that is as intimate as other people's relationships with their McNair friends.	☐	☐	☐	☐	☐
19) I've recently gotten a good idea about how to do something from a McNair friend.	☐	☐	☐	☐	☐
20) I wish my McNair friends were much different.	☐	☐	☐	☐	☐

34. Please answer the following questions with respect to your <u>GENERAL PEERS</u>.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1) My friends give me the moral support I need.	☐	☐	☐	☐	☐
2) Most other people are closer to their friends than I am.	☐	☐	☐	☐	☐
3) My friends enjoy hearing about what I think.	☐	☐	☐	☐	☐
4) Certain friends come to me when they have problems or need advice.	☐	☐	☐	☐	☐
5) I rely on my friends for emotional support.	☐	☐	☐	☐	☐

6) If I felt that one or more of my friends were upset with me, I'd just keep it to myself.	☐	☐	☐	☐	☐
7) I feel that I'm on the fringe in my circle of friends.	☐	☐	☐	☐	☐
8) There is a friend I could go to if I were just feeling down, without feeling funny about it later.	☐	☐	☐	☐	☐
9) My friends and I are very open about what we think about things.	☐	☐	☐	☐	☐
10) My friends are sensitive to my personal needs.	☐	☐	☐	☐	☐
11) My friends come to me for emotional support.	☐	☐	☐	☐	☐
12) My friends are good at helping me solve problems.	☐	☐	☐	☐	☐
13) I have a deep sharing relationship with a number of friends.	☐	☐	☐	☐	☐
14) My friends get good ideas about how to do things or make things from me.	☐	☐	☐	☐	☐
15) When I confide in friends, it makes me feel uncomfortable.	☐	☐	☐	☐	☐
16) My friends seek me out for companionship.	☐	☐	☐	☐	☐
17) I think that my friends feel that I'm good at helping them solve problems.	☐	☐	☐	☐	☐

18) I don't have a relationship with a friend that is as intimate as other people's relationships with friends.	☐	☐	☐	☐	☐
19) I've recently gotten a good idea about how to do something from a friend.	☐	☐	☐	☐	☐
20) I wish my friends were much different.	☐	☐	☐	☐	☐

35. ACADEMIC SELF CONCEPT SCALE

Listed below are a number of statements concerning school-related attitudes. Rate each item as it pertains to <u>YOU </u>personally. Base your ratings on how you feel most of the time.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Being a student is a very rewarding experience.				
2. *If* I try hard enough, I will be able to get good grades.				
3. Most of the time my efforts in school are rewarded.				
4. No matter how hard I try, I don't do well in school.				
5. I often expect to do poorly on exams.				
6. All in all, I feel I am a capable student.				
7. I do well in my courses given the amount of time I dedicate to my studying.				
8. My parents are not satisfied with my grades in college.				

9. Others view me as intelligent.				
10. Most courses are very easy for me.				
11. I sometimes feel like dropping out of school.				
12. Most of my classmates do better in school than I do.				
13. Most of my instructors think that I am a good student.				
14. At times, I feel college is too difficult for me.				
15. All in all, I am proud of my grades in college.				
16. Most of the time, while taking a test I feel confident.				
	Strongly Disagree	Disagree	Agree	Strongly Agree
17. I feel capable of helping others with their classwork.				
18. I feel teachers' standards are too high for me.				
19. It's hard for me to keep up with my classwork.				
20. I am satisfied with the class assignments that I turn in.				
21. At times, I feel like a failure.				
22. I feel I don't study enough before a test.				
23. Most exams are easy for me.				
24. I have doubts that I will do well in my major.				
25. For me, studying hard pays off.				
26. I have a hard time getting through school.				

27. I am good at scheduling my study time.				
28. I have a fairly clear sense of my academic goals.				
29. I'd like to be a much better student than I am now.				
30. I often get discouraged about school.				
31. I enjoy doing my schoolwork.				
32. I consider myself a very good student.				
33. I usually get the grades I deserve in my courses.				
34. I do not study as much as I should.				
35. I usually feel on top of my course work by finals week.				
36. Others consider me a good student.				
37. I feel that I am better than the average college student.				
38. In most of the courses, I feel that my classmates are better prepared than I am.				
39. I feel that I don't have the necessary abilities for certain courses in my major.				
40. I have poor study habits.				

36. COLLEGE ACADEMIC SELF EFFICACY SCALE

How much confidence do you have about doing each of the behaviors listed below? For each statement below, choose the response that best represents your confidence.

	None	Very Little	Some	A Lot	Quite a Lot
1. Taking well-organized notes during a lecture.	☐	☐	☐	☐	☐

2. Participating in a class discussion.	☐	☐	☐	☐	☐
3. Answering a question in a large class.	☐	☐	☐	☐	☐
4. Answering a question in a small class.	☐	☐	☐	☐	☐
5. Taking "objective" tests (multiple chose, T-F, matching).	☐	☐	☐	☐	☐
6. Taking essay tests.	☐	☐	☐	☐	☐
7. Writing a high quality term paper.	☐	☐	☐	☐	☐
8. Listening carefully during a lecture on a different topic.	☐	☐	☐	☐	☐
9. Tutoring another student.	☐	☐	☐	☐	☐
10. Explaining a concept to another student.	☐	☐	☐	☐	☐
11. Asking a professor in class to review a concept you don't understand.	☐	☐	☐	☐	☐
12. Earning good marks in most courses.	☐	☐	☐	☐	☐
13. Studying enough to understand content thoroughly.	☐	☐	☐	☐	☐
14. Running for student government office.	☐	☐	☐	☐	☐
15. Participating in extracurricular events (sports, clubs).	☐	☐	☐	☐	☐
16. Making professors respect you.	☐	☐	☐	☐	☐
17. Attending class regularly.	☐	☐	☐	☐	☐
18. Attending class consistently in a dull course.	☐	☐	☐	☐	☐
19. Making a professor think you're paying attention in class.	☐	☐	☐	☐	☐
20. Understanding most ideas you read in your test.	☐	☐	☐	☐	☐
21. Understanding most ideas presented in class.	☐	☐	☐	☐	☐

22. Performing simple math computations.	☐	☐	☐	☐	☐
23. Using a computer.	☐	☐	☐	☐	☐
24. Mastering most content in a math course.	☐	☐	☐	☐	☐
25. Talking to a professor privately to get to know him or her better.	☐	☐	☐	☐	☐
26. Relating course content to material in other courses.	☐	☐	☐	☐	☐
27. Challenging a professor's opinion in class.	☐	☐	☐	☐	☐
28. Applying lecture content to a laboratory session.	☐	☐	☐	☐	☐
29. Making good use of the library.	☐	☐	☐	☐	☐
30. Getting good grades.	☐	☐	☐	☐	☐
31. Spreading out studying instead of cramming.	☐	☐	☐	☐	☐
32. Understanding difficult passages in textbooks.	☐	☐	☐	☐	☐
33. Mastering content in a course you're not interested in.	☐	☐	☐	☐	☐

37. MCNAIR STUDENTS EVALUATION

One a scale of 1-5 (1= Not At All & 5= A Lot)

How much has YOUR EXPERIENCE IN THE McNair Scholars Program contributed to your knowledge, skills, and personal development in the following areas?

	Not At All	Hardly Any	Neutral	Somewhat	A Lot
1. Acquiring a broad general education.	☐	☐	☐	☐	☐
2. Acquiring job or work-related knowledge and skills.	☐	☐	☐	☐	☐
3. Writing clearly and effectively.	☐	☐	☐	☐	☐

4. Speaking clearly and effectively.	☐	☐	☐	☐	☐
5. Thinking critically and analytically.	☐	☐	☐	☐	☐
6. Solving numerical problems.	☐	☐	☐	☐	☐
7. Using computer and information technology.	☐	☐	☐	☐	☐
8. Working effectively with others.	☐	☐	☐	☐	☐
9. Learning effectively on your own.	☐	☐	☐	☐	☐
10. Understanding yourself.	☐	☐	☐	☐	☐
11. Understanding people of other racial and ethnic backgrounds.	☐	☐	☐	☐	☐
12. Developing a personal code of values and ethics.	☐	☐	☐	☐	☐
13. Contributing to the welfare of your community.	☐	☐	☐	☐	☐
14. Developing clearer career goals.	☐	☐	☐	☐	☐
15. Gaining information about career opportunities.	☐	☐	☐	☐	☐

CAMPUS CLIMATE

46. Instructions: How often are the following things true about YOUR UNIVERSITY? Mark the best answer for each statement:

	Never	Hardly Ever	Sometimes	Most of the Time	Always
1. Teachers take a personal interest in students	☐	☐	☐	☐	☐
2. Teachers go out of their way to help students	☐	☐	☐	☐	☐
3. If students want to talk about something, teachers will find time to do it	☐	☐	☐	☐	☐
4. Students really enjoy their classes	☐	☐	☐	☐	☐
5. Students at this college get to know each other really well	☐	☐	☐	☐	☐
6. Students at this college are very interested in getting to know other students	☐	☐	☐	☐	☐
7. Students enjoy working together on projects	☐	☐	☐	☐	☐
8. Students get to know each other well in classes	☐	☐	☐	☐	☐

	Never	Hardly Ever	Sometimes	Most of the Time	Always
9. Students enjoy doing things with each other in school activities	☐	☐	☐	☐	☐
10. Teachers ask students what they want to learn about	☐	☐	☐	☐	☐

College Students' Perceptions Study (Non- McNair Students)

Demographic Data

1. Have you ever conducted research before?
    Yes
     No

2. Do you enjoy conducting research?
    Yes
     No

3. Do you plan to pursue a career that involves conducting research?
    Yes
     No

4. Has any members of your immediate family received a degree from a 4 year college?
    Yes
     No

5. Do you receive any of the following financial aid:

                    Yes   No
Pell Grants
Student Loans
Scholarships

6. Age: _____

7. Gender:

       Female

       Male

       Other (please specify _____)

8. How do you identify yourself in terms of racial/ethnic group?

       American Indian or Alaskan Native

       Black, not of Hispanic origin

       Hispanic or Latino

       White, not of Hispanic origin

       Asian or Pacific Islander

       Other (Please Specify_____)

9. Marital status:

       Married

       Single

       Divorced

       Separated

       Widowed

10. Number of children: _____

11. If applicable, age of children: _____

12. Are you current employed ?

       Yes

       No

13. If yes, on average how many hours do you work weekly?

           0- 5

           6-10

           11- 15

           16- 20

           21- 25

           26- 30

           31- 35

           36- 40

           41+

14. How many credits are you taking for the current semester?
      0-6
      7-12
      13+

15. Current major:_____

16. Current minor: _____

17. What was your cumulative high school Grade Point Average (GPA)? _____ GPA (use   4.0-0.0 scale)

18. What is your current cumulative Grade Point Average (GPA)? _____ GPA (use
      4.0-0.0 scale)

19. Do you plan to go to Graduate School immediately after you graduate?
      Yes
      No

20. If no, how long do you expect to take off before you go to Graduate School?
      I have decided not to attend graduate school
      1 year
      2 years
      3 years
      4+ years

21. What is the highest degree you plan to pursue?
      Bachelor's Degree
      Master's Degree
      Juris Doctor Degree (e.g., law school)
      Medical Degree
      Ph.D.
      Other (please specify _____)

22. Do you currently have someone in your life that you consider a mentor?
      Yes
      No

23. If yes, what is your relationship with your mentor?
      Parent/ Guardian
      McNair Faculty
      Non-McNair Faculty
      Senior student

Friend
Other (please specify_____)

24. EDUCATIONAL EXPECTATIONS MEASURE
Answer the following questions about your educational expectations:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I expect to receive my bachelor's degree.		☐	☐	☐	☐
2. I expect to apply to graduate school.		☐	☐	☐	☐
3. I expect to be accepted to graduate school.	☐	☐	☐	☐	☐
4. I expect to complete graduate school.		☐	☐	☐	☐

25. EXTRACURRICULAR ACTIVITY/INVOLVEMENT MEASURE

About how many hours do you spend in a typical 7-day week doing each of the following?

	0	1-5	6-10	11-20	21-30	31-40	+40
1. Preparing for class alone (studying, reading, writing, rehearsing, doing homework, or other activities related to your program).		☐	☐	☐	☐	☐	☐
2. Participating in non college-sponsored activities (sporting events, movies, fairs).		☐	☐	☐	☐	☐	☐
3. Participating in college-sponsored activities (organizations, campus publications, student government, intercollegiate or intramural sports, etc).		☐	☐	☐	☐	☐	☐

26. Now, please indicate your level of involvement in each of the following activities:

	Not Engaged	A little engaged	Moderately Engaged	Very Engaged	N/A
1. Preparing for class alone (studying, reading, writing, rehearsing, doing homework, or other activities related to your program).		☐	☐	☐	☐
2. Participating in non college-sponsored activities (sporting events, movies, fairs).		☐	☐	☐	☐
3. Participating in college-sponsored activities (organizations, campus publications, student government, intercollegiate or intramural sports, etc).		☐	☐	☐	☐

27. Please answer the following questions with respect to general University faculty:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. General faculty know if students understand what is being taught.					
2. General faculty demonstrate respect for students					
3. General faculty set challenging but attainable goals for students.					

4. General faculty acknowledge when students have done well.					
5. General faculty are helpful in new situations without taking over.					
6. General faculty stress important concepts.					
7. General faculty are approachable.					
8. General faculty correct students without belittling them.					
9. General faculty listen to students.					
10. General faculty can be trusted.					
11. General faculty provide helpful feedback on student assignments.					
12. General faculty are open to different points of view.					
13. General faculty encourage students to ask questions.					
14. General faculty provide help outside of class.					
15. General faculty vary teaching methods to meet student needs.					

16. General faculty make expectations clear.					
17. General faculty are patient with students.					
18. General faculty are good role models for students.					
19. General faculty are realistic in expectations.					
20. General faculty present information clearly.					
21. General faculty clarify information that is not understood.					
22. General faculty have a genuine interest in students.					
23. General faculty provide study guides and written materials.					
24. General faculty demonstrate confidence in students.					

28. Please answer the following questions with respect to your <u>GENERAL PEERS</u>.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1) My friends give me the moral support I need.	☐	☐	☐	☐	☐

2) Most other people are closer to their friends than I am.	☐	☐	☐	☐	☐
3) My friends enjoy hearing about what I think.	☐	☐	☐	☐	☐
4) Certain friends come to me when they have problems or need advice.	☐	☐	☐	☐	☐
5) I rely on my friends for emotional support.	☐	☐	☐	☐	☐
6) If I felt that one or more of my friends were upset with me, I'd just keep it to myself.	☐	☐	☐	☐	☐
7) I feel that I'm on the fringe in my circle of friends.	☐	☐	☐	☐	☐
8) There is a friend I could go to if I were just feeling down, without feeling funny about it later.	☐	☐	☐	☐	☐
9) My friends and I are very open about what we think about things.	☐	☐	☐	☐	☐
10) My friends are sensitive to my personal needs.	☐	☐	☐	☐	☐
11) My friends come to me for emotional support.	☐	☐	☐	☐	☐
12) My friends are good at helping me solve problems.	☐	☐	☐	☐	☐
13) I have a deep sharing relationship with a number of friends.	☐	☐	☐	☐	☐

14) My friends get good ideas about how to do things or make things from me.	☐	☐	☐	☐	☐
15) When I confide in friends, it makes me feel uncomfortable.	☐	☐	☐	☐	☐
16) My friends seek me out for companionship.	☐	☐	☐	☐	☐
17) I think that my friends feel that I'm good at helping them solve problems.	☐	☐	☐	☐	☐
18) I don't have a relationship with a friend that is as intimate as other people's relationships with friends.	☐	☐	☐	☐	☐
19) I've recently gotten a good idea about how to do something from a friend.	☐	☐	☐	☐	☐
20) I wish my friends were much different.	☐	☐	☐	☐	☐

29. ACADEMIC SELF CONCEPT SCALE

Listed below are a number of statements concerning school-related attitudes. Rate each item as it pertains to YOU personally. Base your ratings on how you feel most of the time.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Being a student is a very rewarding experience.				
2. *If* I try hard enough, I will be able to get good grades.				
3. Most of the time my efforts in school are rewarded.				

4. No matter how hard I try, I don't do well in school.				
5. I often expect to do poorly on exams.				
6. All in all, I feel I am a capable student.				
7. I do well in my courses given the amount of time I dedicate to my studying.				
8. My parents are not satisfied with my grades in college.				
9. Others view me as intelligent.				
10. Most courses are very easy for me.				
11. I sometimes feel like dropping out of school.				
12. Most of my classmates do better in school than I do.				
13. Most of my instructors think that I am a good student.				
14. At times, I feel college is too difficult for me.				
15. All in all, I am proud of my grades in college.				
16. Most of the time, while taking a test I feel confident.				
17. I feel capable of helping others with their classwork.				
18. I feel teachers' standards are too high for me.				
19. It's hard for me to keep up with my classwork.				
20. I am satisfied with the class assignments that I turn in.				
21. At times, I feel like a failure.				
22. I feel I don't study enough before a test.				

23. Most exams are easy for me.				
24. I have doubts that I will do well in my major.				
25. For me, studying hard pays off.				
26. I have a hard time getting through school.				
27. I am good at scheduling my study time.				
28. I have a fairly clear sense of my academic goals.				
29. I'd like to be a much better student than I am now.				
30. I often get discouraged about school.				
31. I enjoy doing my schoolwork.				
32. I consider myself a very good student.				
33. I usually get the grades I deserve in my courses.				
34. I do not study as much as I should.				
35. I usually feel on top of my course work by finals week.				
36. Others consider me a good student.				
37. I feel that I am better than the average college student.				
38. In most of the courses, I feel that my classmates are better prepared than I am.				
39. I feel that I don't have the necessary abilities for certain courses in my major.				
40. I have poor study habits.				

30. COLLEGE ACADEMIC SELF EFFICACY SCALE

How much confidence do you have about doing each of the behaviors listed below? For each statement below, choose the response that best represents your confidence.

	None	Very Little	Some	A Lot	Quite a Lot
1. Taking well-organized notes during a lecture.	☐	☐	☐	☐	☐
2. Participating in a class discussion.	☐	☐	☐	☐	☐
3. Answering a question in a large class.	☐	☐	☐	☐	☐
4. Answering a question in a small class.	☐	☐	☐	☐	☐
5. Taking "objective" tests (multiple chose, T-F, matching).	☐	☐	☐	☐	☐
6. Taking essay tests.	☐	☐	☐	☐	☐
7. Writing a high quality term paper.	☐	☐	☐	☐	☐
8. Listening carefully during a lecture on a different topic.	☐	☐	☐	☐	☐
9. Tutoring another student.	☐	☐	☐	☐	☐
10. Explaining a concept to another student.	☐	☐	☐	☐	☐
11. Asking a professor in class to review a concept you don't understand.	☐	☐	☐	☐	☐
12. Earning good marks in most courses.	☐	☐	☐	☐	☐
13. Studying enough to understand content thoroughly.	☐	☐	☐	☐	☐
14. Running for student government office.	☐	☐	☐	☐	☐
15. Participating in extracurricular events (sports, clubs).	☐	☐	☐	☐	☐
16. Making professors respect you.	☐	☐	☐	☐	☐

17. Attending class regularly.	☐	☐	☐	☐	☐
18. Attending class consistently in a dull course.	☐	☐	☐	☐	☐
19. Making a professor think you're paying attention in class.	☐	☐	☐	☐	☐
20. Understanding most ideas you read in your test.	☐	☐	☐	☐	☐
21. Understanding most ideas presented in class.	☐	☐	☐	☐	☐
22. Performing simple math computations.	☐	☐	☐	☐	☐
23. Using a computer.	☐	☐	☐	☐	☐
24. Mastering most content in a math course.	☐	☐	☐	☐	☐
25. Talking to a professor privately to get to know him or her better.	☐	☐	☐	☐	☐
26. Relating course content to material in other courses.	☐	☐	☐	☐	☐
27. Challenging a professor's opinion in class.	☐	☐	☐	☐	☐
28. Applying lecture content to a laboratory session.	☐	☐	☐	☐	☐
29. Making good use of the library.	☐	☐	☐	☐	☐
30. Getting good grades.	☐	☐	☐	☐	☐
31. Spreading out studying instead of cramming.	☐	☐	☐	☐	☐
32. Understanding difficult passages in textbooks.	☐	☐	☐	☐	☐
33. Mastering content in a course you're not interested in.	☐	☐	☐	☐	☐

CAMPUS CLIMATE

46. Instructions: How often are the following things true about YOUR UNIVERSITY? Mark the best answer for each statement:

	Never	Hardly Ever	Sometimes	Most of the Time	Always
1. Teachers take a personal interest in students	☐	☐	☐	☐	☐
2. Teachers go out of their way to help students	☐	☐	☐	☐	☐
3. If students want to talk about something, teachers will find time to do it	☐	☐	☐	☐	☐
4. Students really enjoy their classes	☐	☐	☐	☐	☐
5. Students at this college get to know each other really well	☐	☐	☐	☐	☐
6. Students at this college are very interested in getting to know other students	☐	☐	☐	☐	☐

	Never	Hardly Ever	Sometimes	Most of the Time	Always
7. Students enjoy working together on projects	☐	☐	☐	☐	☐
8. Students get to know each other well in classes	☐	☐	☐	☐	☐
9. Students enjoy doing things with each other in school activities	☐	☐	☐	☐	☐
10. Teachers ask students what they want to learn about	☐	☐	☐	☐	☐