

EXAMINING RELATIONSHIPS AMONG FACULTY-STUDENT INTERACTIONS,  
ACADEMIC SELF-EFFICACY, SELF-REGULATION, AND ACADEMIC  
ACHIEVEMENT OF UNDERGRADUATE STUDENTS

by

Michelle A. Gnoleba  
A Thesis  
Submitted to the  
Graduate Faculty  
of  
George Mason University  
in Partial Fulfillment of  
the Requirements for the Degree  
of  
Master of Arts  
Interdisciplinary Studies

Committee:

\_\_\_\_\_ Director

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Program Director

\_\_\_\_\_ Dean, College of Humanities and Social  
Sciences

Date: \_\_\_\_\_ Fall Semester 2015  
George Mason University  
Fairfax, VA

Examining Relationships among Faculty-Student Interactions, Academic Self-Efficacy,  
Self-Regulation, and Academic Achievement of Undergraduate students

A Thesis submitted in partial fulfillment of the requirements for the degree of Master of  
Arts at George Mason University

by

Michelle A. Gnoleba  
Bachelors of Science  
University of Mary Washington, 2013

Director: Anastasia Kitsantas, Professor  
College of Education & Human Development

Fall Semester 2015  
George Mason University  
Fairfax, VA



This work is licensed under a [creative commons attribution-noncommercial 3.0 unported license](https://creativecommons.org/licenses/by-nc/3.0/).

## **DEDICATION**

I'd like to dedicate my thesis to my parents Paul and Brigitte Gnoleba. You all have supported me from the beginning. You have given me words of encouragement and prayers when I needed it the most. I am proud to tell you that the egg is fully boiled with no cracks! Thank you again and God Bless.

## ACKNOWLEDGMENTS

Words cannot express how thankful I am for the support that I have received throughout my educational career at George Mason University. I'd like to give a big thank you to the members of my thesis committee for their time and efforts throughout the process. Dr. Jan Arminio and Dr. Sheri Berkeley, your guidance and support was greatly appreciated. A special thank you to my committee chair, Dr. Anastasia Kitsantas. Thank you Dr. Kitsantas for always supporting my ideas and challenging me to produce quality work. You've always had high expectations and it has really helped me throughout the entire process.

Thank you Dr. Suzanne Hiller for making my ideas into a research project. EDRS 590 was one of my favorite courses throughout my graduate school work. Erin Ramirez, thanks for being a great statistics professor. I received an A in your stats class because of your hard work and patience for all questions. Thank you Dr. Kimberly Holmes for working with me on retention research. Thank you Dr. Todd Rose for being a great advisor. I have learned so much from you and I will continue to grow as a student affairs professional.

Thank you to the University of Mary Washington Psychology Department. Your continuous support is appreciated. Dr. Miriam Liss and Dr. Mindy Erchull, thank you for offering a great undergraduate research experience. My experience from our research team is what inspired me to write a thesis in graduate school. Dr. Liss, you have supported me since Psychology 100. As a student, you were always willing to teach me new concepts and you have encouraged me to strive for my dreams ever since. Our relationship is what inspired me to investigate the importance of quality faculty-student interaction. As an undergraduate student, my academic self-efficacy increased because of your support and I will ensure that I have quality interactions with students as a student affairs professional.

Thank you to my parents and family for their support. Thank you to my partner Diomede for believing in me. Thank you Heavenly Father for always being there for me. Best wishes to all!

## TABLE OF CONTENTS

List of Tables .....	vii
List of Figures .....	viii
Abstract .....	ix
Introduction.....	1
Equity Scorecard Perspective.....	2
Equity scorecard process. ....	4
Connecting the Achievement Gap to the Proposed Study .....	5
Significance of the Study .....	7
Key Terms .....	9
Literature Review.....	11
Faculty-Student Interactions and Academic Achievement .....	11
Self-Efficacy and Academic Achievement .....	17
Faculty-Student Interactions and Self-Efficacy .....	22
Self-Regulated Learning .....	23
Self-Regulated Learning and Faculty-Student Interactions .....	26
Self-Regulated Learning and Self-Efficacy .....	28
Self-Regulated Learning and Academic Achievement .....	31
Differences in URM Students .....	33
Faculty-Student Interactions, Academic Self-Efficacy, Self-Regulation, and Academic Achievement.....	34
Methods.....	36
Participants and Setting.....	36
Measures.....	39
Data Analysis Approach.....	40
Results.....	42
Descriptive Statistics .....	42
Correlation Analyses .....	42

ANOVA .....	45
Regression Analyses .....	48
Discussion.....	50
Implications for Practice and Key Recommendations .....	55
Workshops for faculty during faculty orientation .....	57
Incorporating faculty-student experiences in the curriculum .....	58
Semester evaluations that inquire about faculty-student interactions .....	59
Campus climate committees for a chilly campus climate .....	59
Open discussions regarding campus climate. ....	60
Limitations .....	61
Future Research.....	61
Conclusion.....	63
Appendix A.....	65
Appendix B.....	66
Appendix C.....	68
Appendix D.....	65
Appendix E .....	73
Appendix F.....	75
References.....	77

## LIST OF TABLES

Table	Page
Table 1 <i>Demographics</i> .....	37
Table 2 <i>Means and Standard Deviations for Responses pertaining to Grades, Assignment Preference, and Work Preference</i> .....	38
Table 3 <i>Pearson Correlation Matrix among Faculty-Student Interactions, Academic Self-Efficacy, Self-Regulation, and Grade Point Average (GPA)</i> .....	44
Table 4 <i>Means and Standard Deviations for Variables in the Study Race</i> .....	47
Table 5 <i>Regressions Results Predicting Grade Point Average of Undergraduate College Students</i> .....	49



## LIST OF FIGURES

Figure	Page
<i>Figure 1.</i> The Relationships among Faculty-Student Interactions, Academic Self-Efficacy, Self-Regulation, and Academic Achievement .....	6

## **ABSTRACT**

### **EXAMINING RELATIONSHIPS AMONG FACULTY-STUDENT INTERACTIONS, ACADEMIC SELF-EFFICACY, SELF-REGULATION, AND ACADEMIC ACHIEVEMENT OF UNDERGRADUATE STUDENTS**

Michelle A. Gnoleba, MAIS

George Mason University, 2015

Thesis Director: Dr. Anastasia Kitsantas

The present study focused on undergraduate college students ( $N = 214$ ) with the aim to (a) investigate relationships among faculty-student interactions, academic self-efficacy, self-regulation and academic achievement and (b) examine if there were differences between White, Asian, African-American, and Hispanic students. Participants' perceptions of faculty-student interactions, academic self-efficacy, self-regulation and academic achievement (GPA) were assessed through surveys. These target variables were hypothesized to be correlated and serve as significant predictors of GPA. Significant differences were also expected among the racial groups. Results indicated that there were positive relationships between faculty-student interactions, academic self-efficacy, self-regulation, and GPA. Faculty-student interactions, academic self-efficacy and self-regulation served as significant predictors of GPA. As expected, there were group differences among White, Asian, African-American, and Hispanic students for faculty-

student interactions, academic self-efficacy, and GPA. Educational implications and directions for future research are discussed.

## INTRODUCTION

A great number of people are attending college more than ever before. Specifically, over 19.9 million people enrolled into college in the year of 2012 which was about a 37% increase since the year of 2000 (Snyder & Dillow, 2013). However, increased access to higher education does not necessarily equate to equitable college graduation rates among different racial groups. Research examining the achievement gap has been extensively studied and dates back to the Equality of Educational Opportunity report from 1966. Research in this area shows that African Americans, Hispanics, and Native Americans currently have lower college graduation rates than White and Asian students (Bensimon, 2005). Unfortunately, these patterns of inequality are evident at two-year, four-year, public, private institutions and even minority serving institutions (Bensimon, 2005). The majority of college retention research has focused on full time, traditional, undergraduate students, with a six year completion time frame.

In addition, few institutions have nearly closed the achievement gap between underrepresented minority (URM) and non-underrepresented minority students (non-URM) (Lynch & Engle, 2010). The question is what, if anything, are institutions that have closed the achievement gap doing differently than institutions who have not? The following study investigated the relationship between faculty-student interactions, self-efficacy, self-regulation and academic achievement.

## **Equity Scorecard Perspective**

Since retention and academic achievement are pressing issues in higher education research, many scholars look at the issue from a variety of angles. Estela Bensimon and the Center for Urban Education (CUE) argued that achievement disparities may be the problems of educators and policy.

Bensimon (2005) argued:

That is, individuals—the ways in which they teach, think students learn and connect with students, and the assumptions they make about students based on their race or ethnicity—can create the problem of unequal outcomes. Such individuals, if placed in situations where they learn the ways in which their own thinking creates or accentuates inequities, can also learn new ways of thinking that are more equity minded. Individually and collectively, campus members can be the creators of the conditions that result in unequal and or equitable outcomes.  
(p. 103)

Bensimon and the CUE focus on institutional accountability when addressing the achievement disparities, and they emphasize the importance of faculty-student interactions in relation to academic achievement. Faculty-student interactions are the formal and informal interactions that occur between faculty and students. These interactions can take place inside and outside of the classroom. Quality faculty-student interactions can also build academic self-efficacy and within students. Academic self-

efficacy is the belief that people hold about their ability to complete an academic task or goal. With encouragement from faculty, students can gain more academic self-efficacy and achieve at high levels. In addition, self-regulation is the idea that students are responsible for their own learning and it has strongly been linked to academic self-efficacy and academic achievement. Faculty can also create environments which promote academic self-efficacy and self-regulation thus promoting academic achievement.

Another aspect of the Equity Scorecard Process is the concept of cognitive frames which are bodies of knowledge that educators unconsciously use to make everyday decisions about students. Cognitive frames are problematic when automatic, negative judgments are made towards certain groups, and when stereotypes are the primary source of a person's initial judgment.

Bensimon has identified diversity, deficit, and equity as the three cognitive frames that educators may use while working with students. Educators and institutions, who are guided by a diversity cognitive frame solely focus their attention on the demographics of a student body in terms of interracial contact and human relations (Bensimon, 2005). The diversity cognitive frame seems fully beneficial to students, however it doesn't fully address the academic achievement disparities between different racial groups.

The deficit cognitive frame focuses on the negative assumptions of students and disregards the ways in which an institution can promote academic achievement for all students (Bensimon, 2005). The danger with this cognitive frame is that some educators may view academic achievement and low retention rates as natural and unchangeable. Bensimon (2005) noted that "It can be also conveyed in well-meaning, but pessimistic

attributions, such as concluding that students cannot be expected to overcome the disadvantages of poverty and under preparation; therefore, unequal outcomes are to be expected” (p.102). The deficit cognitive frame contributes to achievement disparities because the ways in which educators connect with students may promote unequal outcomes. For example, if educators are guided by the deficit mindset, then they may not make an extra effort to guide students with historically lower academic success because of low academic expectations, thus promoting the achievement gap.

An educator who is guided by a cognitive frame of equity intentionally focuses on the academic outcomes of African-American, Hispanic, and Native-American students (Bensimon, 2005). These individuals are also aware of the inequalities from a historical standpoint. Individuals who are guided by a cognitive frame of equity recognize that there are achievement disparities between non-URM and URM students. Educators who adopt the equity cognitive frames recognize that the expectations from educators and institutions influence the success of students, and that institutions should be held accountable for educational outcomes. Institutions who are guided by the cognitive frame of equity will most likely close the college achievement gap (Bensimon, 2005).

**Equity scorecard process.** Bensimon and the Center for Urban Education proposed the Equity Scorecard process as a possible solution to close the college achievement gap between non-URM and URM students. The Equity Scorecard Process includes four phases that aid institutions in closing the achievement gap. CUE provides tools to help institutions monitor student outcomes and finds new ways to address the achievement gap from an institutional standpoint. The Equity Scorecard process goes

beyond common practice of reporting data. Instead they recommend best practices for an institution's unique needs. During the process, the Center for Urban Education provides the evidence team with quantitative and qualitative data from students to aid in finding solutions for equity.

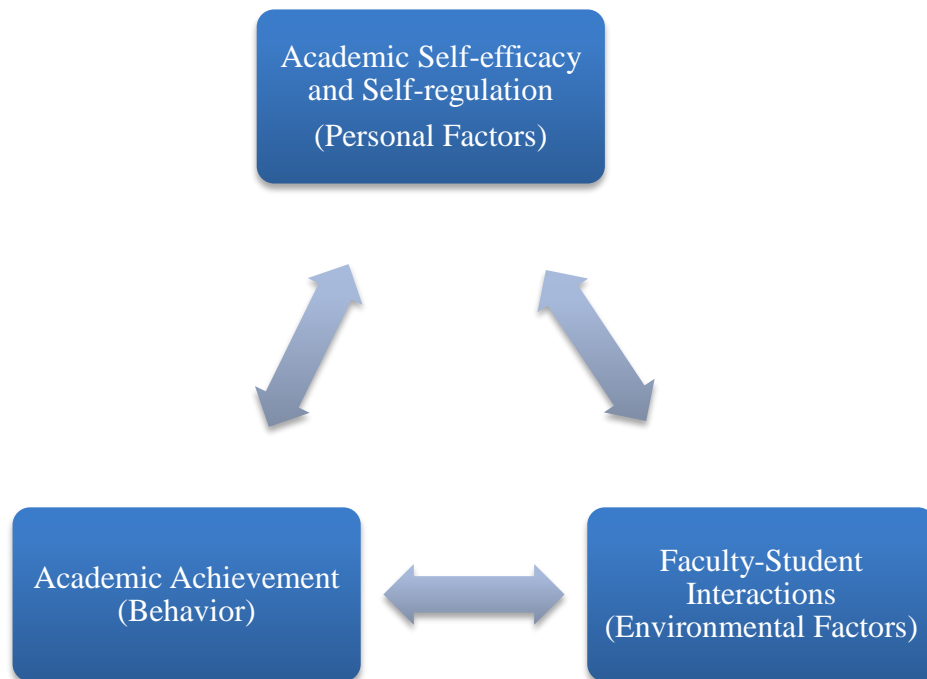
The Equity Scorecard approach takes the focus away from students and it inspires faculty and staff to concentrate on the ways in which they can promote a successful environment for learning. The Equity Scorecard process is successful because the CUE encourages institutions to prioritize the educational outcomes of underrepresented minority students. Institutions that have prioritized academic achievement have seen significant changes in the academic success rates of their students (Bensimon, 2005).

### **Connecting the Achievement Gap to the Proposed Study**

The achievement gap continues to be an issue in education and it is essential to study potential factors that may promote academic achievement. The current study examines the relationship between faculty-student interactions, academic self-efficacy, and self-regulation, and how these factors predict academic achievement for college students. Aspects of faculty-student interaction that were investigated included (a) career guidance, (b) off-campus interactions, (c) approachability, (d) accessibility, (e) negative experiences, (f) respectful interactions, (g) caring attitude, and (h) connectedness. By investigating the target variables, a goal was to learn how they can contribute to finding effective ways to close the achievement gap. The study also investigated if quality faculty-student interactions, academic self-efficacy, self-regulation can provide a possible explanation about institutions that have successfully closed the achievement gap between



non-URM and URM students. Research questions include: (a) Do faculty-student interactions, academic self-efficacy and self-regulation account for a significant amount of variance in GPA and (b) Are there group differences in these effects? Chapter 2 provides an extensive literature review on how the target variables are related to academic achievement. The synthesis graphic illustrates how the factors such as faculty-student interactions, academic self-efficacy and self-regulation, interchangeably influence behavior such as academic achievement (Bandura, 2001).



*Figure 1. The Relationships among Faculty-Student Interactions, Academic Self-Efficacy, Self-Regulation, and Academic Achievement (Bandura, 2001).*

## **Significance of the Study**

Academic achievement is a significant topic in the field of higher education because it is essential for faculty and student affair professionals to be aware of the important influence that they may have on a student's achievement. According to the historic American Council on Education student personnel point of view (1949), student affairs professionals and faculty have the responsibility to support students and promote holistic development. Institutions of higher education should also be held accountable for academic achievement. Institutions that have closed the achievement gap between non-URM and URM students have made academic achievement and retention an institutional priority (Harris & Bensimon, 2012).

It is also necessary to address core issues that may promote or prevent student achievement. With a better understanding of the influences of academic achievement then educators can find effective solutions that aim towards graduation parity. There are a variety of perspectives such as the Equity Scorecard Process and the Campus Climate Perspective that discuss potential ways to close the achievement gap. The Equity Scorecard Process encourages educators to use a cognitive frame of equity while working with students in order to promote an environment where all students are expected to achieve (Harris & Bensimon, 2012). Similarly, the Campus Climate Perspective places on an emphasis on providing a warm climate for all students because sense of belonging is a key factor in academic achievement (Gusa, 2010). The current study may serve as an additional perspective in that if educators ensure quality faculty-student interactions,

build academic self-efficacy in students and promote self-regulated environments then it may aid in closing the achievement gap.

Additionally, the current study separately examines White, Asian, African-American and Hispanic students. This is significant because different groups of students may rely and benefit from different factors compared to other groups and different racial groups may need different types of interventions to promote academic achievement. For example, self-regulation may be a significant predictor of GPA for African-American students while academic self-efficacy may be a significant predictor of GPA for Asian students. If educators are aware of group differences then they can create interventions which specifically address the needs of specific groups of students.

The research is also significant because it highlights the potential impact that an educator can have on a student's success. Previous literature has indicated that quality faculty-student interactions have a positive relationship with academic achievement (Micari & Pazos, 2012). Educators have the ability to empower students to make them successful. This research will highlight the importance of educators and how much of an influence that they may have on students' academic achievement. By empowering students, educators can potentially increase self-efficacy within students which may shape students' collegiate experience. The study also highlights how a student's mindset may influence their experience and the ways in which faculty can shape their mindset as well.

## **Key Terms**

For the purposes of this study, the following key terms were used. These terms were selected to facilitate the understanding of educational psychology and higher education research:

*Faculty-Student Interactions:* Faculty-student Interactions as defined by Cokley, Komarraju, Rosales, Pickett, and Patel (2007) are the everyday interactions that a student has with a faculty member. Different aspects of faculty-student interaction include (a) career guidance, (b) off-campus interactions, (c) approachability, (d) accessibility, (e) negative experiences, (f) respectful interactions, (g) caring attitude, and (h) connectedness.

*Academic Self-efficacy:* Self efficacy is defined by Bandura (1977) as "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p.193). Academic self-efficacy is specific to beliefs in academia. The study analyzed the relationship between academic self-efficacy, faculty-student interactions, self-regulation, and academic achievement.

*Academic Achievement:* Academic achievement is defined by grade point average (GPA). A GPA of at least 2.0 is classified as good academic standing (Micari & Pazos, 2012). In addition, students reported questions regarding their most frequent grade, grade for the most challenging course, assignment preference, and class work preference.

*Underrepresented minority students (URM):* EdTrust, a non-profit education advocacy group, has classified underrepresented students as African-Americans, Hispanics, and Native-Americans (EdTrust, 2000).

*Non-Underrepresented minority students (non-URM):* EdTrust (2000) has defined non-URM students as White and Asians.

*Self-regulation/Perceived responsibility for learning:* Perceived responsibility for learning is defined as the perceived accountability that a student has on their academic achievement (Zimmerman & Kitsantas, 2007).

## **LITERATURE REVIEW**

In this chapter, literature on faculty-student interactions, academic self-efficacy, self-regulation and how they relate to academic achievement is reviewed. The literature review summarizes relevant studies and discusses the ways in which it supports the current study.

### **Faculty-Student Interactions and Academic Achievement**

Many scholars agree that quality faculty-student interactions are essential for academic achievement (Hsieh, Sullivan, & Guerra, 2007; Komarraju & Bhattacharaya, 2010; Kuh, Kinzie, Schuh, & Whitt, 2005; Micari & Pazos, 2012; Pascarella, 2006). Research indicates that aspects such as approachability and accessibility facilitate quality relationships between faculty and students. Approachability and accessibility involve faculty who are accessible inside and outside of the classroom, respond promptly to student emails, have regular office hours, and more. Kuh (2008a) argued that faculty-student interactions consists of many facets such as, faculty-student research teams, working with faculty on activities other than course work (e.g., program activities, student club activities), discussing course grades, and receiving prompt academic feedback. In sum, quality faculty-student interactions increase the likely-hood of academic achievement (Pascarella, 2006).

Previous literature has indicated that faculty-student interactions and mentoring have an impact on learning and academic achievement (Komarraju & Bhattacharaya, 2010; Micari & Pazos, 2012; Hsiesh, Sullivan, & Guerra, 2007). Bond (2015) investigated the effect of faculty-student interactions on the academic achievement and the persistence of Hispanic students. Social capital models were the foundation of the study and factors such as perceptions of belonging and social engagement were investigated. Bond (2015) found that students' interactions with faculty had a significant but small impact on GPA. Generally speaking, students who interacted with faculty outside of class had a higher GPA. The results in the study are consistent with the hypothesis of the current research study that faculty-student interactions have a positive relationship with academic achievement.

Furthermore, Crisp and Cruz (2009) found that African-American and Hispanic college students who were in a mentoring program had higher GPA and retention compared to students who were not in the program. Another study discovered that African-American and Hispanic students who were mentored obtained more college credits compared to students who were not (Campbell & Campbell, 2007). These results suggest that mentoring relationships significantly impact academic achievement for URM students. Crisp and Cruz (2009) and Campbell and Campbell (2007) specifically addressed the relationship between mentoring and the influence that it has on the academic achievement of Hispanic and African-American students. Students who had quality mentoring relationships with faculty had higher GPAs and more academic persistence compared to students who did not have those opportunities. In general, the

studies had consistent findings with previous studies in that mentoring resulted in higher GPAs and more college credits. These studies support the rationale for the current study because they show the link between mentoring and academic achievement.

Moreover, Komarraju, Musulkin, and Bhattacharya (2010) examined eight different components of student-faculty interactions (respect, guidance, approachability, guidance, caring, interactions outside of the class, connected, accessible, and negative experiences) as predictors of students' academic achievement and motivation. The researchers hypothesized that there would be a positive relationship between the seven aspects of faculty-student interaction, student success, and motivation. They also hypothesized that negative experiences of faculty-student interaction would have a positive correlation with the lack of motivation in students.

Participants included 242 undergraduate students from a mid-size, Midwestern, public university. Researchers implemented the Student Professor Interaction Scale, the Academic Motivations Scale, and the Academic Self-Concept Scale. Data were analyzed using correlation and regression to examine the eight types of student-faculty interactions as the predictors and academic self-concept, intrinsic motivation, extrinsic motivation, amotivation, and GPA as outcomes variables. Researchers discovered that students who perceived their faculty as approachable, respectful, and available for frequent interactions outside of class were more likely to report being more confident of academic skills and feeling academically motivated. In contrast, students who felt alienated or distant from professors experienced a lack of motivation (Komarraju, Musulkin, & Bhattacharya, 2010). The results highlighted that faculty-student interactions have a psychological



influence on students' academic performance. When students perceived faculty as approachable, their academic confidence and motivation significantly increased.

The results of Komarraju, Musulkin, and Bhattacharya (2010) are consistent with Bond (2015) because both studies indicated that positive faculty-student interactions promote academic achievement in students. Bond (2015) had less of an emphasis on the impact of faculty-student interactions on academic achievement and focused more on the implication of social models. However, Komarraju, Musulkin, and Bhattacharya (2010) investigated different components of faculty-student interactions and as a result found the different ways in which faculty-student interactions have a positive relationship with academic achievement. The current research study has similar goals as Komarraju, Musulkin, and Bhattacharya (2010) because there is an emphasis on the different types of faculty-student interactions and its relationship with academic achievement.

Additionally, Micari and Pazos (2012), assessed the impact that faculty-student interaction has on a challenging science course. Previous literature suggests that the way students feel about their relationship with their professor has a strong impact on their outcome of a challenging course and about college in general. Kuh and Hu (2001) conducted a large multi-institutional study and found that positive informal student-faculty interaction impacted student retention among first-year college students. Informal faculty-student interaction is defined as more spontaneous and gradual, while formal faculty student-interaction are those that are officially organized or sanctioned by the university such as the classroom setting (Thomas, Wolters, Horn, & Kennedy, 2014). While there is substantial literature on faculty-student interactions, little research has

investigated this relationship based on specific types of college courses. The researchers examined Organic Chemistry as a case study. Organic Chemistry has been cited as one of the most challenging courses in the science curriculum (Grove, Hershberger & Bretz, 2008). The researchers hypothesized that there would be a positive relationship between faculty-student relationship and students' academic performance and confidence.

Participants included 113 undergraduate students at a mid-sized, mid-western university who were currently taking or had recently taken the course. Data for this study was collected among students in six different organic chemistry courses with four different professors. The study used a questionnaire containing 12 Likert-style items to assess students' perceptions of their relationship with their professors, confidence in the course, and sense of science identity. The researchers focused on variables that were deemed important by faculty-student interaction literature which included (a) status as a role model, (b) ease for asking for help, (c) and students' sense that they are respected by their professor (Komarraju, Musulkin, & Bhattacharya, 2010). Science identity and confidence focused on the sense of belongingness in science, value placed on doing well in science, confidence with coursework, and course success.

Student performance was measured using a standardized z-score based on the student's final grade in the course. Linear regression analysis was used to test if there was a positive relationship between faculty-student interaction and students' performance in the course. Previous GPA was a predictor to account for the possible impact that faculty-student interaction had on academic achievement. Gender and minority status were also

included as covariates in the analysis. The standardized final grade was tested as the outcome variable. Results indicated that faculty-student interaction was a significant predictor of final grades. To test for the positive relationship between faculty-student interaction and students' confidence in the course, linear regression analysis was conducted. Faculty-student interaction served as the predictor and confidence was the outcome variable. Previous GPA was included as a predictor to account for the relationship of faculty-student interaction on academic achievement. Gender and race were also included. Results indicated that faculty-student interaction was a positive predictor of confidence. However, faculty-student interaction failed to predict science identity. These findings are consistent with the previous studies discussed because they display the positive relationship between faculty-student interaction and academic success. The current study involves assessing whether faculty-student interactions have a positive relationship between academic self-efficacy, and academic achievement.

Micari and Pazos (2012) considered faculty-student interactions as approachability, accessibility, and mentoring. The difference between Micari and Pazos (2012) and the previous studies discussed was that it specifically addressed the relationship of faculty-student interaction in relation to academic achievement in a science course as opposed to academic achievement in general. The current study will take the same approach as the majority of faculty-student interaction research and investigate academic achievement in general.

In addition, Roberts and Styron (2010) discovered that the quality of faculty-student interaction had a positive effect on students' efforts in college which in turn

positively affected their college satisfaction and learning gains. Interactions such as conducting research with faculty have been related to academic achievement, particularly for African-American students (Kim & Sax, 2009). These previous findings support Roberts and Styron's (2010) research that students who are more involved with campus activities, such as interacting with faculty, will be more likely to persist academically.

In sum, the majority of studies that investigate faculty-student interactions have discovered that it promotes academic achievement. Some studies focused on academic persistence, while some were interested in learning more about different factors that influence academic achievement. The current study examined the relationships among faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement. In addition, it was hypothesized that faculty-student interactions, academic self-efficacy, and self-regulation were significant predictors of academic achievement

### **Self-Efficacy and Academic Achievement**

Bandura (1997) defined self-efficacy as people's belief that they can complete a specific task or goal. Bandura (1977) suggested that vicarious learning (learning a behavior by modeling another person) and verbal persuasion (encouraging people that they can complete a task) were two essential sources of self-efficacy. An individual with high levels of self-efficacy for a particular task is more likely to persist and do well compared to an individual who has low levels of self-efficacy. Researchers have found that self-efficacy has been linked to academic success (Chang, 2005; DeWitz, Wossley, & Walsh, 2009; Santos & Reigados, 2002). Furthermore, self-efficacy serves as robust theory in predicting student academic performance (Lent & Hackett, 1987; Siegel,

Galassi, & Ware, 1985). In sum, students with higher levels of self-efficacy typically succeed at higher levels compared to students with lower levels of self-efficacy.

DeWitz, Woosley, and Walsh (2009) investigated the association between Frankl's concept of the purpose of life (1963, 1969) and Bandura's theory of self-efficacy (1997, 2001) as a predictor of students who have a desire to stay or leave college. Previous studies have found self-efficacy as a strong predictor of collegiate and academic success. The researchers hypothesized that self-efficacy beliefs in regards to college success are significantly associated with the purpose of life. The researchers also hypothesized that individuals who scored higher on the measures of self-efficacy would report a significantly higher purpose of life.

Participants included 344 undergraduate college students at a large Midwestern University. Demographic data revealed that 68% of participants ( $n = 233$ ) were female and 32% ( $n = 111$ ) were male. The majority of the sample self-identified as White (76.2%;  $n = 262$ ). In addition, the majority of students were first-year students (79.3%;  $n = 273$ ).

Researchers implemented the College Self-Efficacy Inventory (Solberg, O'Brien, Villerreal, Kennel, & Davis, 1993); the Scale of Perceived Social Self-Efficacy (Smith & Betz, 2000); the General Self-Efficacy Subscale of the Self-Efficacy Scale (Sherer et al., 1982); and the Marlowe-Crown Social Desirability Scale (Crown & Marlow, 1960). All of the variables of self-efficacy were significantly and positively correlated with the purpose of life. Self-efficacy was the most significant predictor for purpose in life. The study gave support to the idea of creating interventions based on self-efficacy for student

retention and success. A goal of the current study is to investigate the relationship between self-efficacy and academic achievement.

Additionally, Hsieh and Sullivan (2007) addressed students' efficacy and goal orientation in college. The researchers investigated how students with varying self-efficacy levels and academic standing differ in academic standing, academic goals, and college achievement. Previous literature have defined the completion of a bachelor's degree as a goal, and that motivation heavily influences a student's desire to graduate. The researchers were specifically interested to see if there were differences in students' self-efficacy beliefs and on the perceptions of goal setting.

Participants included 112 undergraduate students from a large, metropolitan, Hispanic Serving Institution in the Southwest. Students completed the Patterns of Adaptive Learning Survey (PALS) (Midgley, Maecher, & Urda, 1993), and the Goal Orientation Inventory (Elliot & Church, 1997). An ANOVA was conducted using self-efficacy scores as the dependent variables and the two groups of students (good academic standing and academic probation) as the independent variable. Results indicated that students' self-efficacy judgments were significantly higher for students who were in good academic standing than those who were on academic probation. Hsieh, Sullivan, and Guerra (2007) and DeWitz, Woosley, and Walsh (2009) both supported the notion that students with higher self-efficacy succeed academically. The current study also hypothesizes that there will be positive relationship between academic self-efficacy and academic achievement.

Furthermore, Vuong and Tracz (2010) analyzed the effects of self-efficacy on academic success of first-generation college sophomore students. A considerably large group of students who experience high attrition rates are college sophomores. This phenomenon is known as the “sophomore slump” (Feldman & Newcomb, 1969). First generation sophomore students experience many challenges in higher education, and the researchers were interested in seeing how self-efficacy may play a role in academic success for these students. Researchers were interested in learning if academic achievement and persistence rates are a function of self-efficacy and whether there are differences in mean academic success and persistence rates between first generation and other generation students.

The participants consisted of college students from 5 of the 23 California State University campuses. Students completed the College Self-Efficacy Inventory (Zajacova, Lynch, & Espenshade, 2005). Multiple linear regressions indicated that both GPA and persistence rates were functions of self-efficacy. There were also significant differences between first generation and second generation college students. First generation students had lower GPAs compared to second generation students. Overall, the results of the study didn't find that first-generation sophomore students had different perceptions of self-efficacy compared to second-generation sophomore students. Vuong and Tracz (2010) specifically addressed the sophomore student population, however the researchers found similar findings to the DeWitz, Woosley, and Walsh (2009) and Hsiesh, Sullivan, and Guerra (2007) that students with higher levels of self-efficacy also had higher levels of academic achievement.

Lastly, Chang (2005) investigated the effects of self-efficacy and stress on the academic performance of minority students. The study was unique in that it investigated academic self-efficacy as opposed to self-efficacy in general. A large meta-analysis of studies which investigated self-efficacy concluded that academic self-efficacy measures were stronger predictors of academic outcomes and general self-efficacy measures were less closely associated (Multon, Brown, & Lent, 1991). Previous research has indicated that immigrant born and minority students may have stress as a dominant factor influencing academic outcomes due to acculturation pressures (Mena, Padilla, & Maldonado, 1987). Many studies have investigated how stress and self-efficacy independently influences education outcomes. The researchers hypothesized that both academic self-efficacy and stress would have an effect on all outcomes, with higher levels of self-efficacy and lower levels of stress leading to higher academic outcomes.

Participants included 107 undergraduate first-year students. The participants were mainly non-traditional, minority, and immigrant students. The researchers used a portion of the College Self-Efficacy Inventory (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993) to assess college self-efficacy. The Academic Milestones Scale (Lent, Brown, & Larkin, 1986) was also administered to participants. The research conducted a factor analysis that revealed a moderate to strong negative correlation between each stress and self-efficacy factor. The results suggested that stress and self-efficacy are related but distinct constructs. Also, self-efficacy was the single strongest predictor of academic outcomes for students. The difference between Chang (2005) and the previous studies discussed is that it specifically addressed non-traditional, minority, and immigrant



students, however results supported the positive relationship between self-efficacy and academic achievement.

### **Faculty-Student Interactions and Self-Efficacy**

Previous research has indicated that quality faculty-student interactions also increase self-efficacy within students. Specifically looking among Hispanic students, a mentoring program found that frequent contact with one's faculty mentor was related to higher levels of self-efficacy (Santos & Reigados, 2002). In addition, Komarruju, Muslikin, and Bhattacharya (2010) found that students' academic self-concept, a construct that is similar to self-efficacy, was strongly related to their relationship with faculty. The researchers discovered that students who perceived their faculty as approachable, respectful, and available for frequent interactions outside of class were more likely to report being more confident of academic skills and feeling academically motivated.

Vogt (2008) had similar findings in a survey of 1,300 undergraduate students at a large state university. Students who reported better relationships with faculty gained more academic self-efficacy. Students were more likely to feel that they made strides in math, science, problem-solving ability, general intellectual ability, and career development. Additionally, a study that looked specifically at elementary school students found that teacher modeling and feedback behaviors significantly increased student's academic self-efficacy (Schunk, 1989).

## **Self-Regulated Learning**

Self-regulated learning is the concept that students become responsible for their own academic learning (Zimmerman, 2006). Self-regulated students approach their learning tasks with discipline and confidence ensuring that their assignments are completed to the best of their abilities. Self-regulated students succeed academically because they are accountable for their academic success and overcome academic obstacles. Being proactive, seeking help, setting goals, and self-monitoring are a few characteristics of a self-regulated student. These characteristics enable students to be self-aware, knowledgeable, and persistent with their academic success. Another important feature of self-regulated learning is the “self-oriented feedback” loop. During the feedback loop, students monitor their learning strategies and assess if they should be altered or strengthened. In general, self-regulated learners also seek out opportunities to learn and self-regulate when they find it to be the most beneficial for their success.

Researchers assess perceived academic responsibility as a way to assess for self-regulation. The Perceived Responsibility for Learning Scale (Zimmerman & Kitsantas, 2005) examined whether participants perceived students or teachers as responsible for academic achievement.

Perceived responsibility has been examined in relation to other variables such as homework completion. Zimmerman and Kitsantas (2005) developed a reliable academic responsibility measure and examined self-efficacy as a mediator for learning and academic achievement. In addition, the researchers were also interested in the relation between assigned homework experiences on students’ perceived responsibility as well the

self-efficacy of their learning. Zimmerman and Kitsantas (2005) proposed a path analysis model and hypothesized that students' homework reports would predict their self-efficacy for learning beliefs which would predict GPA. The researchers argued that students who are able to successfully complete homework are also expected to grow in their sense of self-efficacy about learning on their own (Zimmerman & Kitsantas, 2005). In addition, homework is expected to enhance students' perceived responsibility for academic outcomes which is expected to predict academic achievement. Schunk and Zimmerman (1994) hypothesized that self-efficacy beliefs predicted perceived academic responsibility because since students are able to self-regulate their learning then they may also perceive themselves as more responsible for their academic outcomes than instructors. Furthermore, the researchers hypothesized that prior academic GPA would predict GPA and that high achieving students were predicted to have higher self-efficacy beliefs about their learning.

Participants included female high school students ( $n = 180$ ). The sample was racially and ethnically diverse: 44% White, 14% Black, 27% Hispanic, and 15% Asian/other. The average age of participants was 16 years old. Participants were given a personal data questionnaire, a homework survey, a Self-efficacy for Learning Form, and the Perceived Responsibility for Learning Scale. General results indicated that the paths from the quality of homework to self-efficacy for learning, self-efficacy to perceived responsibility, and GPA were statistically significant and substantial in size. Paths between homework and perceived responsibility and self-efficacy and GPA were significant but smaller in size. Correlation analyses revealed that all variables

significantly predicted GPA at the end of the semester. The current study assesses the relationship between academic self-efficacy and perceived academic responsibility. The researcher hypothesizes that there will be a positive relationship between academic self-efficacy and perceived academic responsibility. The difference between Zimmerman and Kitsantas (2005) and the current study was that homework was not investigated but instead faculty-student interactions.

A few years later, Kitsantas and Zimmerman (2009) conducted a study with college students on the mediating role of self-regulatory beliefs as a continuation from the study previously discussed. The purpose of the study was to test the generality of the previous findings to male and female college students. Participants included 223 college students. The sample was less diverse compared to the sample in Zimmerman and Kitsantas (2005). Participants were given a personal data questionnaire which also assessed SAT scores, a homework survey, the quality of homework scale, the Self-efficacy for Learning Form, and the Perceived Responsibility for Learning Scale. Grades were obtained from school records at the end of the semester.

There were no significant differences for any of the variables between male and female college students. Correlation analyses revealed that all variables significantly predicted student grades at the end of the academic semester. Grades also correlated with SAT scores which indicated that the SAT measure is a reliable predictor of academic success in college. Path analysis indicated that the quality of homework to self-efficacy for learning, self-efficacy to perceived responsibility, and of quality homework to grades were statistically significant and substantial. In sum, the findings provided a great fit to

the previous study on high school girls (Zimmerman & Kitsantas, 2005). The current study also investigates the relationship between self-regulation and academic achievement but with non-URM and URM college students.

### **Self-Regulated Learning and Faculty-Student Interactions**

In Self-regulated learning, students become the agents of their academic success. Classroom environments where the teacher prescribes and the student performs, does not support self-regulated learning (Boekaerts, 1997). Alternatively, classroom environments which are engaging have the potential to stimulate the development of self-regulated learning. In terms of distance education, Willis (2001) argued that faculty are responsible for creating environments which promote self-regulated learning. Dabbagh and Kitsantas (2004) also linked the seven competencies of web-based learning (Thatch & Murphy, 1995) to ways that faculty can promote self-regulation within students.

A year later, Young (2005) examined how faculty-created classroom environments affect students' motivation to learn and self-regulate. Young (2005) hypothesized that classroom-environmental factors on motivation will be mediated by students' perceived academic responsibility. Participants included undergraduate college students from a marketing course ( $n = 257$ ). Participants completed a survey which assessed self-regulated learning, self-efficacy, motivation, and classroom environment. Path analysis revealed direct paths between intrinsic motivation and self-regulation. The results were consistent to the literature (Meece, Blumenfeld, & Hoyle, 1998; Nolen, 1988; Pintrich & De Groot, 1990) and provided insight to faculty about the way in which the faculty-created classroom environments can promote self-regulated learning. The

current study will emphasize the importance of faculty-student interactions on self-regulation, self-efficacy, and academic achievement.

Similarly, a study conducted by Miller, Heafner, and Massey (2009) specifically investigated how minority high school students (African-American; 93%) responded to increased academic expectations from teachers. Students were given an intervention that focused on strategies to promote self-regulation. The intervention included increased expectations specifically for reading, writing, collaboration, and multi-day assignments. After the intervention, participants were interviewed and the interviews focused on the motivational, affective, and cognitive components of self-regulated learning (Zimmerman, 2000). Results indicated that after the intervention, students responded positively to the higher academic expectations. In addition, students had high confidence in their academic abilities. Despite the difficulties and frequent failures in their assignments, none of the students selected the lowest self-efficacy rating. The students also predicted that their next test grade would be higher than the previous test grade. Results also indicated that students who were lower performers offered more reasons for avoiding their homework tasks. The lower performers lacked many self-regulatory strategies to complete homework. Even though Miller, Heafner, and Massey (2008) specifically addressed minority high school students, the summarized studies supported the notion that faculty also have the ability to create environments that promote self-regulation.

## **Self-Regulated Learning and Self-Efficacy**

Social cognitive theory proposes that self-efficacy is a key variable that affects self-regulation (Zimmerman, 1998). Students with higher self-efficacy are more likely to challenge themselves academically, persist in times of academic difficulty which leads to higher level of academic achievement. According to Schunk and Ertmer (1999), “Individuals acquire information to appraise efficacy from their performances, vicarious (observational) experiences, forms of persuasion, and psychological responses (e.g., sweating, heart rate) (p.255). Self-efficacy is proposed to affect self-regulation in a set of phases. In the forethought phase, students enter a learning situation with varying levels of self-efficacy. During performance control, students use self-regulatory strategies as they engage in a task. Self-regulatory strategies are selected by students based on their knowledge of the strategy, the perceptions that they have about a strategy and their efficacy for using them effectively (Zimmerman, 1998). In the self-reflection phase, students evaluate their progress. Perceived progress strengthens self-efficacy which enhances learning. However, perceptions of little progress do not diminish self-efficacy especially if a student acts proactively and seeks a more effective strategy (Schunk, 1996).

Extensive research has supported a link between self-regulation and self-efficacy. An early study conducted by Sawyer, Graham, and Harris (1992) trained fifth and sixth grade students on self-verbalizing a writing compositions strategy and on self-regulation. The researchers found that self-regulation training was more effective and increased self-efficacy within students. A decade later, Schunk and Ertmer (1999) examined how goals

and self-evaluation affect self-efficacy and self-regulatory strategies. Participants ( $n = 44$ ) included students enrolled in an introductory computer course. Students were placed in conditions which assessed either process goals (techniques students' use to learn knowledge) or product goals (rate or quantity of work to be completed). Results showed that students who received process goals rated self-efficacy and self-regulation competence higher compared to students who received product goals. Also students who self-evaluated frequently reported higher levels of self-efficacy. Sawyer, Graham, and Harris (1992) and Schunk and Ertmer (1999) both support that self-efficacy and self-regulation have a positive relationship.

Additionally, Zimmerman and Martinez-Pons (1990) assessed 90 elementary, middle and high school students from academically gifted and non-academically gifted schools. The researchers were interested in investigating the relationship of students' academic self-efficacy in predicting self-regulation strategies for learning. Students were interviewed on self-regulated contexts and they were also given a verbal self-efficacy test and a mathematical self-efficacy test. Results indicated that students vary widely in their perceptions of academic self-efficacy and self-regulation. High school students had higher levels of mathematical self-efficacy compared to middle school and elementary school students. Also middle school students had higher levels of mathematical and verbal self-efficacy compared to elementary students. The researchers predicted these findings due to the growing knowledge of mathematical and verbal knowledge from middle school to high school. Furthermore, students who were from the gifted schools had significantly higher levels of self-efficacy and self-regulation compared to students



who were not from gifted schools. As predicted, the number of self-regulated strategies were related to student grade level. Lastly, regression analysis revealed that students' reliance on adults (generally parents) for assistance was negatively correlated to mathematical efficacy and verbal efficacy. However, seeking assistance from peers was positively correlated to verbal self-efficacy. Zimmerman and Martinez-Pons (1990) and the previous studies discussed all support the notion that self-efficacy and self-regulated are positively related.

A few studies have investigated the relationship between self-efficacy and self-regulation and academic achievement in minority students. Schultz (1993) conducted a correlation study which examined the relationship between socioeconomic advantage, achievement motivation (self-regulation and self-efficacy), and academic performance of African-American and Hispanic students. Participants ( $n = 130$ ) were in the fourth through sixth grade. Students responded to the Achievement Motivation Inventory, a scale that was validated by the researchers and inspired from Harter (1981) and Gottfried (1990). Academic performance was measured by the Basic Achievement Skills Individual Screener (Sonnenschein, 1983). Results indicated that socioeconomic advantage, was significantly correlated with mathematics and reading. Higher achievement motivation (self-regulation and self-efficacy) was significantly related to better math and reading performance. Even though Schultz (1993) examined self-regulation and self-efficacy specifically for young minority students, there was still a link between self-efficacy, self-regulation, and academic achievement. Moreover, Britner and Pajares (2001) investigated whether science motivation beliefs of middle school students

( $n = 262$ ) vary depending on gender or race/ethnicity. The researchers also investigated if there were links between academic self-efficacy and self-regulation. Results revealed that African-American students reported stronger task goals, while White students had stronger self-efficacy and sense of achievement. Girls reported stronger self-efficacy and self-efficacy for self-regulation which lead to higher science grades. In addition, self-efficacy and self-concept predicted achievement in science of African-American students. Even though the Britner and Pajares (2001) did not directly find a link between academic self-efficacy and self-regulation in minority students, the majority of studies support the notion that academic self-efficacy and self-regulation have a positive relationship with high academic achievement.

### **Self-Regulated Learning and Academic Achievement**

Previous studies have found links between self-regulation and academic achievement (Simons & Beukhof, 1987). An early study by Zimmerman and Martinez-Pons (1986), correlated high school students' academic strategies with their academic track placement. The sample ( $n = 80$ ) included students who were in the lower track and advanced track. The researchers found that students who were in the advanced track reported significantly greater use of self-regulation strategies compared to students in the lower academic track. Students in the lower academic track reported several common non-self-regulated habits. These responses included reactive statements (i.e., I just do whatever my teachers tells me) and will power statements that lacked strategy (i.e., If I'm having difficulty, motivating myself to complete my homework, I just work harder). The results suggested that students in the lower track didn't exceed as highly compared to

students in the higher track due to the lack of self-regulated strategies. To establish further validity of student reports of self-regulated use, high school teachers were asked to rate their students' self-regulatory strategies in a follow up study (Zimmerman & Martinez-Pons, 1988). The high school teachers were given Likert-based surveys which focused on observable learning strategies and intrinsic motivation displayed during class and homework. The students' mathematics and verbal standardized test scores and the teacher ratings were analyzed through multivariate analyses. Results indicated that the Self-Regulated Learning factor accounted for nearly 80% of variance. These results from both studies indicated a strong link between self-regulated learning and academic achievement. The current study also investigates the link between self-regulation and academic achievement in addition to taking academic self-efficacy and faculty-student interactions into account.

A few studies have investigated the relationship of self-regulation and academic achievement with underrepresented minority students. Bembenutty (2007) used ( $n = 364$ ) college students enrolled in an introductory psychology class. Students responded to the Academic Delay of Gratification Scale (Bembenutty & Karabenick, 1998), the Motivational and Use of Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1993) and academic performance was measured by final course grades. A goal of the study was to examine whether gender and ethnic differences existed in the relationships between academic achievement, self-regulation learning and motivation, and delay of gratification. However, the researcher stated that the outcome of the study didn't quite achieve that goal. Bembenutty (2007) suggested that further research should investigate

the target variables with minority students. The difference between the current study and Bembenutty (2007) is that the current study examined group differences between White, Asian, African-American, Hispanic students while investigating the relationship between faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement.

### **Differences in URM Students**

Since there is a lack of research that investigates URM students' faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement, studies rarely investigate the differences between URM students also. Too, studies tend to put underrepresented groups within the same category. In addition, some studies will examine the differences between non-URM and URM students as two groups (Bembenutty, 2007; Roberts & Stryton, 2010). In order to better understand the relationship between these constructs it is essential for researchers to separate the different groups to learn if there are significant differences between URM groups. In addition, many studies investigating the target variables examine African-American and Hispanic students separately and do not compare both groups (Close & Solberg 2008; Ong, Phinney, & Dennis, 2006; Santos & Reigadoes, 2002). Even though African-American and Hispanic students are rarely compared, previous literature have found positive relationships between faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement in general. The researcher predicts a positive relationship between faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement.

## **Faculty-Student Interactions, Academic Self-Efficacy, Self-Regulation, and Academic Achievement**

The literature review discussed the ways in which faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement are connected.

Literature suggests that there is a strong link between faculty-student interactions and academic achievement. Previous studies have indicated that students who report quality interactions with faculty achieve at high levels (Bond, 2015; Komarraju, Musulkin, & Bhattacharya, 2010; Micari & Pazos, 2012). Some of the literature examined the different types of faculty-student interactions and there were positive relationships with academic achievement. Quality interactions with faculty also promote self-efficacy within students. The literature supports the notion that faculty have the opportunity to increase self-efficacy within students. In addition, students with higher levels of self-efficacy achieve at higher levels compared to students with lower self-efficacy (DeWitz, Woosley & Walsh, 2009; Roberts & Styton, 2010).

There is extensive literature on the relationship between self-regulation and self-efficacy. Previous literature has supported the notion that students who are disciplined self-regulators also have high levels of self-efficacy and academic achievement. Furthermore, perceived academic responsibility, a way to assess self-regulation, was a common factor in students who succeed academically (Kitsantas & Zimmerman, 2005; Zimmerman & Kitsantas, 2009). Literature on faculty-student interaction and self-regulation supported the idea that faculty can promote self-regulation within students. The previous studies support the rationale for the current study because they have

supported the notion that faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement have a positive significant relationship. The current study hypothesized that faculty-student interactions, academic self-efficacy, and self-regulation will account for a significant amount of variance in student academic achievement because of the connection that has been made in previous literature. The current study investigated the following research questions:

- 1) Do faculty-student interactions, academic self-efficacy, and self-regulation account for a significant amount of variance in student academic achievement?
  
- 2) Are there differences between White, Asian, African-American, and Hispanic students?

The researcher hypothesized that there will be positive significant relationships between faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement. Faculty-student interactions, academic self-efficacy and self-regulation are hypothesized to be significant predictors of academic achievement. In addition, it is hypothesized that there will be group differences between White, Asian, African-American, and Hispanic students in the targeted outcomes.

## METHODS

### **Participants and Setting**

Undergraduate students ( $n = 214$ ) from a large research institution in the east coast were included in the study (see Table 1). Participants included first-year students (16.70%), sophomores (13.90%), juniors (34.70%), and seniors (34.30%). The sample was racially diverse; White (56.50%), Asian (15.30%), African-American (15.70%), and Hispanic (11.60%). Students had an average of 75.42 credits and an average GPA of 3.34.

Table 1

*Demographics*

Variables	Frequency/Percentage	M/SD
Gender		
Male	53 (25.00%)	
Female	154 (74.50%)	
Age		23.26 (5.75)
Classification		
Freshman	36 (16.70%)	
Sophomore	30 (13.90 %)	
Junior	75 (34.70%)	
Senior	74 (34.30%)	
Race		
White	122 (56.50%)	
Asian	33 (15.30%)	
African-American	34 (15.70%)	
Hispanic	25 (11.60%)	
Average number of credits		75.46 (37.63)
Grade Point Average		3.34 (.71)

In addition, the sample reported an average of a C+ ( $M=2.62$ ) as the most challenging course grade, An A- ( $M=3.92$ ) as the least challenging course grade and a B+ ( $M=3.59$ ) as the most frequent course grade (see Table 2). Furthermore, participants' preferred individual work (70.70%) and performed best on papers (50.20%). Participants



who didn't complete the survey past the personal data questionnaire were excluded from the data analyses.

Table 2

*Means and Standard Deviations for Responses pertaining to Grades, Assignment Preference, and Work Preference*

	M/SD	Frequency/Percentage
What is the grade for your most challenging course?	2.62 (.96)	
What is grade for the least challenging course?	3.92 (.33)	
What are your most frequent grades?	3.59 (.54)	
Do you perform best on exams, papers, or both?		Exams 47 (21.80%) Papers 108(50.00%) Both 55 (25.50%)
Do you prefer group work, individual work or both?		Group 32 (14.80%) Individual 156(72.20%) Both 22 (10.20%)

The researcher contacted a number of academic departments and inquired if the online survey could be sent out via department listserv. The researcher composed an email invitation for students to ensure that each participant received the same description about

the survey. The online survey was entitled as “The Collegiate Experience” and described by the researcher as a way to learn more about the college experience. Departments that accepted the researcher’s request sent email invitations to their students and encouraged them to participate in the survey. The researcher also attended cultural student club meetings to recruit participants. Students who were interested in participating were emailed the survey link. Participants completed the secure survey hosted through SurveyMonkey.com before being taken to an online debriefing statement.

## **Measures**

A personal data questionnaire was given to participants. The personal data questionnaire assessed gender, race/ethnicity, classification, GPA, questions about their grades and work preference.

The College Academic Self-efficacy Scale (CASES) was used to assess the academic self-efficacy of students (Owen & Froman, 1988). The scale included 33-items and utilized a 5-point Likert scale from “very little confidence” to “no confidence at all.” Sample items included “taking well and organized notes during a lecture” and “participating in class discussion.” CASES had a Cronbach alpha of .85.

The Student-Professor Interaction scale (Cokley, Komarraju, Rosales, Pickett & Patel, 2007) was a 40-item scale used to assess the various types of faculty-student interaction (Owen & Froman, 1988). The scale utilized a 7-point Likert scale and response options ranged from strongly disagree (1) to strongly agree (7). There were nine subscales and sample items with the Cronbach alpha of each subscale follows: (a) career

guidance (4 items; At least one of my professors has provided me with guidance in developing my career goals, and my professors have encouraged me to succeed in achieving my academic dreams  $\alpha = .83$ ), (b) off-Campus interactions (3 items; I have a positive relationship with a professor outside the classroom  $\alpha = .73$ ), (c) approachability (4 items; I feel comfortable approaching professors to discuss my grades and class work  $\alpha = .86$ ), (d) validity Scale (3 items; I work harder to succeed in a class if I know my professor genuinely cares about me  $\alpha = .76$ ), (e) accessibility (4 items; Professors are available when I need guidance or assistance  $\alpha = .87$ ), (f) negative experiences (4 items; My professors seem distant and uninterested to me  $\alpha = -.76$ ), (g) respectful interactions (7 items; Professors value my contributions and opinions, and when I interact with my professors I feel s/ he truly listens to me  $\alpha = .89$ ), (h) caring attitude (3 items; I believe that there is at least one professor who cares about my well-being  $\alpha = .85$ ), and (i) connectedness (3 items; I feel a bond with one or more faculty  $\alpha = .86$ ).

The Perceived Responsibility for Learning Scale (Zimmerman & Kitsantas, 2005) was used to assess whether the participants perceived students or teachers as responsible for learning outcomes. The scale included 18 items and utilized a 7-point Likert scale from “mainly the teacher” to “mainly the student.” Sample items included “being unprepared participant perceived students are more responsible for learning outcomes compared to teachers. The scale had a Cronbach alpha of .90.

### **Data Analysis Approach**

SPSS was used for data analyses. Correlations and descriptive statistics were run to determine if any relationships existed between the variables, one-way ANOVAs were

run to test for significant differences based on racial group, followed by Tukey Post-hoc analyses to compare group differences. Lastly, multiple regressions were run to test whether faculty-student interactions, academic self-efficacy and self-regulation served as significant predictors of academic achievement.

The overall goal of the study was to determine if faculty-student interactions, academic self-efficacy, and self-regulation account for a significant amount of variance in academic achievement (GPA). Another goal of the study was to examine the relationships between faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement.

The study also sought to determine if there were individual group differences between URM students (i.e., African-American and Hispanic students) and non-URM students (i.e., White and Asian students).

The purpose of the present study was two-fold. The goal was to: (a) examine the relationships among faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement and (b) assess if there were group differences between the different ethnic groups for the targeted variables.

## RESULTS

### Descriptive Statistics

Descriptive statistics were analyzed with SPSS 2.0. Table 2 provides the means and standard deviations of the measures that were used in the study by race. White students reported higher quality interaction with faculty members compared to Asian, African-American, and Hispanic students. In addition, there were group differences in faculty-student interactions, academic self-efficacy, self-regulation, and GPA.

### Correlation Analyses

In order to examine the relationships between faculty-student interactions, academic self-efficacy, self-regulation, and GPA a Pearson Correlation analyses was conducted. Table 4 includes the details of each relationship. Results indicated that there were statistically positive relationships between faculty-student interactions and academic self-efficacy, ( $r = .32, p < .01$ ), faculty-student interactions and self-regulation ( $r = .19, p < .01$ ), and faculty-student interactions and GPA ( $r = .31, p < .01$ ). There was a positive significant relationship between career guidance and academic self-efficacy ( $r = .27, p < .01$ ), career guidance and self-regulation ( $r = .23, p < .01$ ), and career guidance and GPA ( $r = .29, p < .01$ ). Results also indicated that there were significant positive relationships between off-campus interactions and academic self-efficacy ( $r = .24, p < .01$ ).

In addition there were also positive significant relationship between approachability and academic self-efficacy ( $r = .34, p <.01$ ), approachability and self-regulation ( $r = .20, p <.01$ ), and approachability and GPA ( $r = .26, p <.01$ ). There was also a positive significant relationship between validity and GPA ( $r = .14, p <.01$ ), accessibility and academic self-efficacy ( $r = .26, p <.01$ ), accessibility and self-regulation ( $r=.21, p<.01$ ), and accessibility and GPA ( $r=.31, p <.01$ ). There were negative significant relationships between negative experiences and academic self-efficacy ( $r = -.31, p <.01$ ), negative experiences and self-regulation ( $r = -.28, p <.01$ ), and negative experiences and GPA ( $r = -.26, p <.01$ ). There were significant positive relationships between respectful interactions and academic self-efficacy ( $r = .28, p <.01$ ), respectful interactions and self-regulation ( $r = .28, p <.01$ ), and respectful interactions and GPA ( $r = .34, p <.01$ ).

Caring attitude and academic self-efficacy were significantly and positively correlated ( $r = .29, p <.01$ ), as well as caring attitude and self-regulation ( $r = .20, p <.01$ ) and caring attitude and GPA ( $r = .22, p <.01$ ). There was a positive relationship between connectedness and academic self-efficacy ( $r = .29, p <.01$ ), connectedness and self-regulation ( $r = .18, p <.05$ ), and connectedness and GPA ( $r = .26, p <.01$ ).

Lastly, there was a positive relationship between academic self-efficacy and self-regulation ( $r = .18, p <.01$ ) and academic self-efficacy and GPA ( $r = .37, p <.01$ ). There was also a positive significant relationship with self-regulation and GPA ( $r = .25, p <.01$ ).

Table 3

*Pearson Correlation Matrix among Faculty-Student Interactions, Academic Self-Efficacy, Self-Regulation, and Grade Point Average (GPA)*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1) Faculty-Student Interaction	-												
2) Career Guidance	.77**	-											
3) Off-Campus Interactions	.58**	.43**	-										
4) Approachability	.68**	.47**	.31**	-									
5) Validity	.39**	.17*	.21**	.07	-								
6) Accessibility	.76**	.56**	.27**	.61**	.22**	-							
7) Negative Experiences	-.27**	-.37**	-.04	-.39**	.10	-.45**	-						
8) Respectful Interactions	.74**	.54**	.18**	.63**	.20**	.79**	-.51**	-					
9) Caring Attitude	.71**	.60**	.40**	.45**	.20**	.52**	-.34**	.50**	-				
10) Connectedness	.78**	.64**	.58**	.45**	.26**	.52**	-.25**	.47**	.64**	-			
11) Academic Self-Efficacy	.32**	.27**	.24**	.34**	-.05	.26**	-.31**	.28**	.27**	.29**	-		
12) Self-Regulation	.19**	.23**	.11	.20**	.02	.21**	-.28**	.28**	.20**	.18*	.19**	-	
13) GPA	.30**	.29**	.12	.26**	.14*	.31**	-.26**	.34**	.21**	.26**	.37*	.25**	-

Note. \*p <.05, \*\*p <.01, \*\*\*p <.0001

## ANOVA

In order to address group differences, a series of one-way ANOVAs were used to assess racial group differences of faculty-student interactions, academic self-efficacy, self-regulation, and GPA. Table 4 provides the ANOVA results by student race. The hypothesis was partially supported because there were group some differences between faculty-student interactions, academic self-efficacy, self-regulation, and GPA.

Overall one-way ANOVAs indicated that there were group differences in faculty-student interactions,  $F(4, 232) = 2.53, p < .05$ ; caring attitude  $F(4, 218) = 2.91, p < .05$ ; self-efficacy,  $F(4, 220) = 2.75, p < .05$ , and GPA,  $F(4, 230) = 2.64, p < .01$ . Even though White students had higher means for faculty-student interactions, academic self-efficacy, self-regulation, and GPA, Tukey tests revealed that there were no significant differences between White, Asian, African-American, and Hispanic students.

A one-way ANOVA was performed to determine if there were group differences in career guidance. Results indicated that there were statistically significant group differences,  $F(4, 212) = 3.89, p < .01$ . Tukey tests revealed that White students ( $M = 5.24$ ) had significantly higher perceptions of career guidance from faculty than Asian students ( $M = 4.75$ ),  $p < .05$ .

In addition, a one-way ANOVA revealed that there were racial group differences in the negative experiences with faculty,  $F(4, 218) = 5.43, p < .001$ . Tukey tests showed that White students ( $M = 2.45$ ) had significantly lower perceptions of negative experiences from faculty than Asian students ( $M = 3.33$ ), and African-American students ( $M = 3.24$ ).



A one-way ANOVA revealed that there were no group differences in self-regulation. However, Tukey tests revealed that White students, ( $M = 5.34$ ) reported higher levels of self-regulation compared to Asian students ( $M = 4.84$ ),  $p < .05$ .

Lastly, there were no group differences for off-campus interactions,  $F(4, 215) = 1.37, p = .25$ ; approachability,  $F(4,217) = 1.41, p = .23$ ; validity,  $F(4,218) = 2.41, p = .05$ ; accessibility,  $F(4,217) = 2.34, p = .06$ ; respectful interactions,  $F(4,215) = 1.99, p = .09$ ; connectedness,  $F(4, 216) = 1.94, p = .10$  and self-regulation,  $F(4,208) = 2.27, p = .06$ .

Table 4  
*Means and Standard Deviations for Variables in the Study Race*

	Race								
	White ( <i>n</i> = 122)		Asian ( <i>n</i> = 33)		African- American ( <i>n</i> = 34)		Hispanic ( <i>n</i> = 25)		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Variables									
Faculty-Student Interactions	5.03	.70	4.86	.62	4.80	.86	4.60	.60	2.53*
• Career Guidance	5.23	1.38	4.75	1.30	4.51	1.56	4.39	1.34	3.89**
• Off-Campus Interactions	3.52	1.70	3.73	1.36	3.14	1.74	2.86	1.25	1.37
• Approachability	5.46	1.24	5.21	1.08	5.13	1.24	5.29	1.11	1.41
• Validity	5.44	1.29	5.39	1.00	4.95	1.14	4.90	.90	2.41
• Accessibility	5.49	1.02	5.26	.90	5.00	1.15	5.12	1.03	2.34
• Negative Experiences	2.45	1.25	3.33	1.57	3.24	1.57	2.36	1.02	5.43***
• Respectful Interactions	5.80	.83	5.62	.74	5.39	.86	5.62	.76	2.00
• Caring Attitude	5.84	1.14	5.20	1.21	5.71	1.04	5.46	.89	2.90*
• Connectedness	4.72	1.53	4.27	1.60	4.39	1.41	3.90	1.31	1.95
Academic Self-Efficacy	3.91	.53	3.58	.78	3.71	.76	3.65	.59	2.75*
Self-Regulation	5.34	.79	4.85	.82	5.07	1.21	5.26	.75	2.27
GPA	3.48	.60	3.21	.92	3.15	.95	3.18	.43	2.65*

*Note.* \**p* <.05, \*\**p* <.01, \*\*\**p* <.001

## Regression Analyses

To examine if faculty-student interactions, academic self-efficacy, and self-regulation predicts GPA a series of regression analyses was conducted. Table 5 provides each regression model by full sample and race. The hypothesis was supported because faculty-student interactions, academic self-efficacy, and self-regulation predicted GPA. Results indicated that 19% of the variance in student GPA was accounted for by faculty-student interactions ( $\beta = .17, p < .01$ ), academic self-efficacy ( $\beta = .28, p < .001$ ), self-regulation ( $\beta = .16, p < .01$ ), for the full sample,  $F(3, 211) = 16.44, p < .001, R^2 = .19$ . Academic self-efficacy accounted for the most variance compared to faculty-student interactions and self-regulation.

For White students, faculty student interactions ( $\beta = .36, p < .001$ ) accounted for 20% of the variance,  $F(3, 109) = 8.90, p < .001, R^2 = .20$ . For Asian students, academic self-efficacy accounted for 33% of the variance, ( $\beta = .56, p < .01$ ). In addition, results indicated that academic self-efficacy ( $\beta = .42, p < .05$ ) and self-regulation ( $\beta = .54, p < .01$ ) accounted for 39% of variance in African-American students,  $F(3, 27) = 5.78, p < .01, R^2 = .39$ . Self-regulation accounted for the most variance compared to academic self-efficacy for African-American students. Results also indicated that faculty student interactions ( $\beta = -.46, p < .05$ ) and self-regulation ( $\beta = .43, p < .05$ ) accounted for 42% of variance in Hispanic students,  $F(3, 18) = 4.42, p < .05, R^2 = .42$ . Faculty-student interaction was the strongest predictor for Hispanic students. However, academic self-efficacy ( $\beta = .47, p = .05$ ) was close to significance.

Table 5

*Regressions Results Predicting Grade Point Average of Undergraduate College Students*

	Variable	Faculty- Student Interactions	Academic Self-Efficacy	Self- Regulation
Full Sample ( <i>n</i> = 214)	$\beta$	.17	.28	.16
	<i>t</i>	2.50**	4.00***	2.43**
	$R^2$	.19		
White ( <i>n</i> = 122)	$\beta$	.36	.16	.03
	<i>t</i>	3.86***	1.73	.28
	$R^2$	.20		
Asian ( <i>n</i> = 33)	$\beta$	.03	.56	-.23
	<i>t</i>	.13	2.82**	-1.32
	$R^2$	.33		
African- American ( <i>n</i> = 34)	$\beta$	.16	.42	.54
	<i>t</i>	1.05	2.76*	3.51**
	$R^2$	.39		
Hispanic ( <i>n</i> = 25)	$\beta$	-.46	.05	.43
	<i>t</i>	-2.37*	.24	2.32*
	$R^2$	.42		

Note, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## DISCUSSION

Correlation analyses revealed a series of positive correlations between faculty-student interactions, academic self-efficacy, self-regulation, and grade point average. The positive correlation that was found between faculty-student interactions and academic self-efficacy aligned with the results of previous studies (Komarruju, Muslikin, & Bhattacharya, 2010; Santos & Reigados, 2002; Vogt, 2008). The previous research supports the notion that positive faculty-student interactions can potentially increase academic self-efficacy within students. There were also positive correlations between eight of the nine faculty-student interaction subscales (i.e., career guidance, off-campus interactions, approachability, validity, accessibility, respectful interactions, caring attitude, and connectedness) and academic self-efficacy. There was a negative correlation between the negative experiences with faculty subscale and academic self-efficacy. Since faculty may have great influence on students' academic self-efficacy, it is necessary to ensure that interactions are worthwhile. Unfortunately, studies have rarely investigated the link between faculty-student interactions and self-efficacy and it is an area that can be further investigated.

Results also revealed that there were positive correlations between faculty-student interactions and self-regulation. This finding also aligns with previous studies that investigated the link between faculty-student interactions and regulation (Meece,

Blumenfeld, & Hoyle, 1998; Nolen, 1988; Pintrich & De Groot, 1990; Young, 2005).

There were also positive correlations between eight of the nine faculty-student interactions subscales (i.e., career guidance, off-campus interactions, approachability, validity, accessibility, respectful interactions, caring attitude, and connectedness) and self-regulation. The negative experiences faculty-student interaction subscale negatively correlated with self-regulation. These results indicate that faculty may potentially have the ability to promote self-regulation within students. Faculty can also create environments which can promote self-regulated learning (Willis, 2001). Classroom environments where students have high expectations from faculty and feedback can promote self-regulation within students.

There was also a positive correlation between faculty-student interactions and academic achievement (GPA). Eight of the nine faculty-student interaction subscales positively correlated with GPA, while the negative experiences subscale negatively correlated with GPA. A number of studies have found this same relationship (Hsieh, Sullivan, & Guerra, 2007; Komarraju & Bhattacharaya, 2010; Kuh et al, 2005; Micari & Pazos, 2012; Pascarella, 2006). These findings support the notion that the engaging experiences that students have with faculty can increase academic achievement and that negative experiences with faculty may negatively impact academic achievement. GPA was self-reported. For reliability of reported GPA, participants answered a series of following questions pertaining to grades. Results indicated that was a positive correlation between faculty-student interactions and most frequent course grade and faculty-student interactions and most challenging course grade. In addition, there was a negative

correlation between negative experiences with faculty and frequent course grades. The results support the idea that quality faculty-student interactions promote higher courses grades which in turn leads to a higher GPA.

Results indicated there was a positive relationship between academic self-efficacy and self-regulation. These results are also consistent with previous studies (Sawyer, Graham & Harris, 1992; Schunk, 1996; Schunk & Ertmer, 1999; Zimmerman, 1998). Social cognitive theory also proposes that self-efficacy is a key variable that influences self-regulation. The results suggest that students who have more academic confidence also feel more accountable for their academic success. If faculty promote academic self-efficacy within students then self-regulation can be a potential outcome. In addition, the results also indicated that there was a positive academic self-efficacy and GPA, which is also consistent with previous studies (Chang, 2005; DeWitz, Wossley, & Walsh 2009; Santos & Reigados, 2002). When students have confidence that they can succeed academically, then they are more likely to do so.

In addition, there was a positive relationship between self-regulation and GPA. This finding was also consistent with previous studies (Bembenutty, 2007; Simons & Beukhof, 1987; Zimmerman & Martinez-Pons, 1988). Students who perceive themselves as more accountable for their academic success will most likely have higher levels of academic achievement.

Regression analysis was used to test for the amount GPA variance that was accounted for faculty-student interactions, academic self-efficacy, and self-regulation. For the full sample, faculty-student interactions, academic self-efficacy, and self-

regulation predicted GPA, with academic self-efficacy as the strongest predictor.

Previous studies haven't investigated the combination of the variables. However, it was expected that the variables predict GPA because faculty-student interactions, academic self-efficacy, and self-regulation are positively correlated with GPA.

However, there were differences in the regression results when the regression addressed specific racial groups. For White and Hispanic students, faculty-student interactions was a significant predictor of GPA. Faculty-student interaction is a part of campus climate and the results suggest that White and Hispanic students may benefit more from quality faculty-student interaction. For the Asian students, academic self-efficacy significantly predicted GPA. The data suggests that academic self-efficacy may be a strong determining factor of academic achievement.

Results indicated that self-regulation significantly predicted GPA for African-American students. The finding mirrors the Bembenuddy (2007) study because underrepresented minority students benefited greatly with high levels of self-regulation. However, the results in Bembenuddy's study were not separated by specific underrepresented minority groups. In addition, faculty-student interaction was a significant predictor of achievement for Hispanic students. These findings align with previous literature which indicated that Hispanic students who were in mentoring programs excelled academically (Campbell & Campbell, 2007; Crisp & Cruz, 2009). Even though the data indicates that faculty-student interactions predicted GPA for Hispanic students, it also predicted GPA for the full sample of participants.



In order to test for group differences, a series of one-way ANOVAs were conducted. The one-way ANOVA revealed that there were group differences in faculty-student interactions, academic self-efficacy, and GPA. However, Tukey post-hoc revealed that there were no significant group differences between White, Asian, African-American, Hispanic students. Tukey test may not have had significance because of lack of statistical power.

Tukey test indicated that White students had significantly higher perceptions of faculty-career guidance compared to Asian students. Faculty-student interaction was used as an indicator of campus climate for the current study. These findings align with research investigating perceptions of campus climate of Asian students. Previous studies indicated that Asian students report having a colder campus climate compared to White students (Ancis, Sedlacek, & Mohr, 2000; Hurtado, 1992; Thile & Matt, 1995).

In addition, there were group differences in the perceptions of negative experiences from faculty. Tukey tests revealed that White students had significantly lower negative experiences than Asians students and African-American students. This finding align with previous studies in that Asian and African-American frequently report feeling isolated and having negative experiences with professors at predominately white institutions (Ancis, Sedlacek, & Mohr, 2000; Gusa, 2010; Nettles, Thoney & Goman, 1986; Suen, 1983). Tukey did not reveal significant differences between Hispanic students and White students. This finding conflicts with previous studies because Asian, African-American, and Hispanic students typically report a chilly campus climate compared to White students (Ancis, Sedlacek, & Mohr, 2000).

There were no group differences in self-regulation, however Tukey tests indicated that White students reported higher levels of self-regulation compared to Asian students. Previous studies mainly investigated the self-regulation of students without separating different racial groups. This finding may suggest that White students perceive themselves as more accountable than teachers for their academic success.

### **Implications for Practice and Key Recommendations**

The results indicated that faculty-student interactions, academic self-efficacy, and self-regulation are significant predictors of GPA. There were also group differences in the student perceptions of faculty student interactions. In order to close the achievement gap between non-URM and URM students, institutions can ensure that students are in an environment which fosters quality faculty-student interactions, encourages a self-regulated environment, and promote academic self-efficacy within students. There are a number of ways that an institution can promote an environment which fosters quality faculty-student interactions, academic self-efficacy, and self-regulation.

The findings of the current study tie in with the Equity Scorecard Process because the findings highlight that quality faculty-student interactions can potentially promote academic achievement. The Equity Scorecard argued that educators can create environments that create or eliminate the achievement gap (Bensimon, 2005). The theory places an emphasis on faculty-student interactions and how they can potentially impact academic achievement and ultimately retention. The Equity Scorecard also noted that achievement gap disparities may also be a result of institutional policy and culture. Results of the current study indicate that faculty-student interactions have a positive

relationship with academic self-efficacy, self-regulation, and academic achievement. Just as the Equity Scorecard, the results of the current study also indicate that quality faculty can create environments where students are empowered to do well academically. Eight of the nine faculty-student interaction subscales positively correlated with academic self-efficacy, academic achievement, and self-regulation. These subscales included (a) career guidance, (b) off-campus interactions, (c) approachability, (d) validity, (e) negative interactions, (f) accessibility (g) respectful interactions, (h) caring attitude and (i) connectedness.

Negative Interactions with faculty was the only subscale that negatively correlated with academic self-efficacy, self-regulation, and academic achievement. In addition, White students reported significantly lower perceptions of negative experiences with faculty compared to Asian and African-American students. This finding aligns with the Equity Scorecard theory because it highlights that the assumptions and interactions that educators may have about certain groups of students may negatively contribute to academic achievement and ultimately the achievement gap. Similarly, the Campus Climate perspective places an emphasis on the importance of a warm campus climate for academic achievement. Typically, Asian, African-American and Hispanic students report a chilly campus climate compared to White students (Gusa, 2010). The current findings align with the campus climate perspective because the Asian, African-American and Hispanic students reported more negative experiences with faculty members. In order to address these issues an institution should emphasize on the importance of faculty-student interactions and a warm campus climate for all students. Below are key recommendations

about the ways in which an institution can create environments which fosters academic achievement.

**Workshops for faculty during faculty orientation.** Regression results indicated that in the full sample, quality faculty-student interactions predicted GPA. Since faculty-student interaction may potentially impact GPA, then it may be beneficial for an institution to emphasize the importance of faculty-student interactions during faculty orientation. During faculty orientation, there can be series of workshops geared towards learning more about the ways in which quality faculty-student interactions may significantly impact a students' collegiate journey. The workshops can first occur during faculty orientation and related topics also be offered through an institutions center for faculty advancement throughout the year. As an incentive for attending after faculty orientation, faculty can enroll in a drawing to potentially receive additional grant funds to conduct research.

Results also indicated that self-regulation predicted GPA. The workshop series can also go into detail about how faculty can create environments which encourage self-regulation in students. If faculty learn more about the ways in which they can create environments that promote self-regulation, then it can potentially promote academic achievement in the classroom. There are a series of instructional teaching models that can be taught during the workshop series. For example, Butler's (1998) strategic content learning technique (SCL) relies on scaffolding principles that promote self-regulation. The SCL approach encourages support from faculty and it is geared towards an individual's needs. The SCL approach was developed in tutoring sessions with college students (Schunk & Zimmerman, 1994). The self-monitoring instructional teaching model is another model

that can be taught during the series. This teaching model is derived from metacognitive views of self-monitoring, operant views of record keeping, and social cognitive of self-efficacy (Schunk & Zimmerman, 1994). The SCL approach and the self-monitoring instructional model are two of the many self-regulation strategies that can be taught to faculty during the workshop series. Institutions that have revamped their faculty orientation have seen how it has been a benefit to the institution overall (Welch, 2002). Incorporating workshops that emphasize the importance of self-regulation, academic self-efficacy, and faculty-student interactions during faculty orientation can create a student-centered school environment.

**Incorporating faculty-student experiences in the curriculum.** Since results indicated that faculty-student interactions predict GPA then institutions can encourage more opportunities for students to work closely with faculty by incorporating these opportunities in the curriculum. For example, faculty-student research teams or faculty-student projects can be a part of graduation requirements and students will have to engage in at least one opportunity. Learning outcomes such as building self-regulation and academic self-efficacy can be a part of the faculty-student engagement experience. The Undergraduate Research Opportunity, UROP, of 1989 is an example of an initiative that focused on increasing faculty-student research opportunities. During the student-faculty research experience, students had an opportunity to have present research at conferences and symposiums with their teams in addition to possibly publishing articles. Students who were apart of the UROP program had higher persistence rates in college, higher retention and higher GPA (Hippel, 1998). UROP is an example of a program that is designed to

connect faculty and students. If more faculty-student research opportunities are created and if it eventually becomes a graduation requirement, then students will have the opportunity to work closely with faculty during their collegiate journey.

**Semester evaluations that inquire about faculty-student interactions.** Along the same lines, questions regarding faculty-student interactions can be a part of semester evaluations. If an institution adopts a campus culture which has an emphasis on faculty-student interactions and a self-regulated learning environment, then an institution can assess if the workshop series and student-faculty opportunities are effective. Institutions can then create other initiatives based on survey responses. In addition, assessments such as the survey from the current study should be given to senior students before graduation. The survey will provide a summary about the perceptions that students have about faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement. At the end of the survey, open ended responses can allow for students to discuss their overall experience with faculty, how it contributed to their academic success, and their suggestions.

**Campus climate committees for a chilly campus climate.** Results noted that White students reported significantly lower perceptions of negative experiences with faculty compared to Asian and African-American students. In addition, White students reported higher perceptions of faculty career guidance compared to Asian students. These results indicate that chilly campus climate may be an issue for minority students. A possible way to foster a warmer climate is to create an environment where students have a sense of belonging. Groups such as campus climate committees can aid in finding ways to create an

environment where students can feel welcome because sense of belonging is linked to academic achievement (Gusa, 2010). The campus climate can consist of faculty members from different areas on campus in addition to a few student representatives. As a committee, they can directly address the lack of sense of belonging that some minority students may feel and create initiatives that can address the issue. The committee can also work directly with the center for faculty advancement, residence life, student activities, and other departments that frequently work with students and provide workshops that encourage constituents to create a welcoming environment for all students.

**Open discussions regarding campus climate.** The multicultural department can also play a large role at addressing the campus climate issues. While the campus climate committee focuses on how departments can create welcoming environments, the multicultural department can coordinate town hall meetings for students where they can discuss their experiences with other students. The facilitator can express that it is an open space and discuss the ways in which the institution wants to create a warm environment for all students. In addition, the multicultural department can create cultural events where students and faculty can come together to learn more about different cultures. In order to address the core issues of a chilly campus climate there can be a liaison from the multicultural department that works closely with the campus climate committee to provide information about the student experience, thus creating initiatives that directly address core issues.

## **Limitations**

Since the study was conducted at an undergraduate research institution, the results cannot be generalized to other grade levels. Also, correlation is not causation. The results that were based from the correlations cannot make inferences about the population. Instead it can only make speculations about the relationship of two variables. However, the ANOVAs and the regressions can make inferences about the different student groups. In addition, the sample sizes for each group were unequal. White students consisted of the majority of the sample and it may have influenced the findings.

The survey consisted of approximately 100 questions. Survey fatigue may have also influenced the survey responses. Survey fatigue research indicated that longer surveys may have lower response rates (Porter, Whitcomb,& Weitzer, 2004). Students who did not answer past the personal data questionnaire were removed from the analyses. If the survey was shorter, then more students may have taken and completed the entire survey. Lastly, GPA was self-reported and may not have served as an accurate representation of a student's true GPA.

## **Future Research**

As mentioned in the limitations, future research can investigate this topic while looking at elementary school, middle school, high school, or graduate school students. It is expected for the results to be similar to the findings from the current study. For example, Kitsantas and Zimmerman (2009) investigated the influence of self-regulation on academic achievement of high school students and have found that students who were high self-regulators had higher grades and this finding aligned with Zimmerman and Kitsantas



(2005) who investigated elementary school students. Additionally, a longitudinal approach can be used in future research. Starting from elementary school, researchers can see if similar trends appear throughout a student's academic journey.

Self-regulation research rarely examines URM students and the results of the current study indicate that self-regulation predicts the academic achievement of some groups URM students more than others. Along the same lines, the results indicate that there are differences in faculty-student interactions, academic self-efficacy, self-regulation, and academic achievement between White, Asian, African-American and Hispanic students. Since there were group differences, future research should separately investigate and compare the different racial groups of students to further examine the uniqueness of each racial group.

There is also lack of research that investigates Native-American students with the target variables. Originally, the researcher wanted to include Native-American students, however only one participant self-identified as Native-American and they were dropped from the analyses due to a small sample size.

Lastly, student engagement with faculty may vary by racial group. Certain groups of students may likely come to faculty for questions while some students may come as an attempt to build rapport with a faculty member. There may be differences depending on racial group and future studies can investigate how it may influence perceptions of faculty-student interaction.

## **Conclusion**

In conclusion, an institution has the ability to emphasize and prioritize what is important in campus culture. Institutions that have closed the achievement gap between non-URM and URM students have prioritized retention and have seen positive changes (Harris & Bensimon, 2007). In the current study faculty-student interactions were a representation of campus climate and this study highlighted that faculty can create encouraging environments which foster academic self-efficacy, self-regulation, and academic achievement.

Faculty-student interactions, academic self-efficacy, and self-regulation, were all significant predictors of academic achievement for the full sample. However, when multiple regression results were separated by race it became easier to see which factors significantly predicted academic achievement for some groups more than others. If educators are aware of the factors that promote academic achievement for specific groups of students then interventions can be informed based on the needs of students. For example, multiple regression analysis indicated that self-regulation and academic self-efficacy accounted for 39% of variance in GPA for African-American students. With this information, interventions that are geared towards promoting academic achievement for African-American students can teach self-regulation techniques such as time-management and goal-setting. Each racial group has differences and academic interventions may vary depending on the student. Academic self-efficacy served as the strongest predictor of academic achievement for the full sample. This finding highlights the importance of

believing in the self and faculty can empower students by letting them know that they believe in their success.

An institution that wants to close their institution's achievement gap can create programs and initiatives which directly addresses academic success for each specific group of students. It may not take one program or one initiative to transform an entire institution's retention rates. However, every effort may potentially contribute to finding a solution to the achievement gap.

## APPENDIX A

### Personal Data Questionnaire:

Sex:

Male                       Female

Age:

Race:

White                                       Black/ African American  
 Hispanic                                       Asian

Classification:

1<sup>st</sup> year                                       2<sup>nd</sup> year                                       3<sup>rd</sup> year  
 4<sup>th</sup> year

Email Address:

What is your grade point average?

How many credits have you earned?

What was the grade for the most challenging course?

What was the grade for the least challenging course?

What grades do you most frequently get in courses?

Would you say that you do best on exams, papers, or both?

Do you enjoy group work or individual work?

## APPENDIX B

### College Questionnaire:

*DIRECTIONS.* We are interested in learning more about you to help us improve our program. Your responses are strictly confidential and will not be shown to others. Do not sign your name. We hope you will answer each item, but there are no penalties for omitting an item.

Male \_\_\_\_ Female \_\_\_\_ Age \_\_\_\_\_  
 Estimate your current grade point average \_\_\_\_\_

How much confidence do you have about doing each of the behaviors listed below?

Circle the letters that best represent your confidence.



- | Lots | A | B | C | D | E | Little  |
|------|---|---|---|---|---|---|
| A    | B | C | D | E |   | 1. Taking well-organized notes during a lecture.                          |
| A    | B | C | D | E |   | 2. Participating in a class discussion.                                   |
| A    | B | C | D | E |   | 3. Answering a question in a large class.                                 |
| A    | B | C | D | E |   | 4. Answering a question in a small class.                                 |
| A    | B | C | D | E |   | 5. Taking “objective” tests (multiple-choice, T-F, matching)              |
| A    | B | C | D | E |   | 6. Taking essay tests.  |
| A    | B | C | D | E |   | 7. Writing a high quality term paper.                                     |
| A    | B | C | D | E |   | 8. Listening carefully during a lecture on a difficult topic.             |
| A    | B | C | D | E |   | 9. Tutoring another student.  |
| A    | B | C | D | E |   | 10. Explaining a concept to another student.                              |
| A    | B | C | D | E |   | 11. Asking a professor in class to review a concept you don’t understand. |
| A    | B | C | D | E |   | 12. Earning good marks in most courses.                                   |
| A    | B | C | D | E |   | 13. Studying enough to understand content thoroughly.                     |
| A    | B | C | D | E |   | 14. Running for student government office.                                |
| A    | B | C | D | E |   | 15. Participating in extracurricular events (sports, clubs).              |
| A    | B | C | D | E |   | 16. Making professors respect you.  |
| A    | B | C | D | E |   | 17. Attending class regularly.  |
| A    | B | C | D | E |   | 18. Attending class consistently in a dull course.                        |
| A    | B | C | D | E |   | 19. Making a professor think you’re paying attention in class.            |
| A    | B | C | D | E |   | 20. Understanding most ideas you read in your texts.                      |

- A B C D E 21. Understanding most ideas presented in class.
- A B C D E 22. Performing simple math computations.
- A B C D E 23. Using a computer.
- A B C D E 24. Mastering most content in a math course.
- A B C D E 25. Talking to a professor privately to get to know him or her.
- A B C D E 26. Relating course content to material in other courses.
- A B C D E 27. Challenging a professor's opinion in class.
- A B C D E 28. Applying lecture content to a laboratory session.
- A B C D E 29. Making good use of the library.
- A B C D E 30. Getting good grades.
- A B C D E 31. Spreading out studying instead of cramming.
- A B C D E 32. Understanding difficult passages in textbooks.
- A B C D E 33. Mastering content in a course you're not interested in.

*Thanks for your help!*

## APPENDIX C

### Perceived Responsibility for Learning Scale

How well students study and learn in school may be partly due to their teacher and partly due to their own efforts. Next to each of the activities listed below, write one of the following numbers indicating who is more responsible: the teacher or the student. For example, regarding question number 1 below, if you believe that when a student is unprepared for a test, the student is slightly more responsible than the teacher, put a 5 in the space next to the question.

The Teacher			Both Equally	The Student		
mainly 1	definitely more 2	slightly more 3	4	slightly more 5	definitely more 6	mainly 7

Who is more responsible:

- \_\_\_\_\_ 1. for a student being unprepared for a test?
- \_\_\_\_\_ 2. for a student being motivated to learn in school?
- \_\_\_\_\_ 3. for a student not finishing homework assignments?
- \_\_\_\_\_ 4. for a student doing well on a test?
- \_\_\_\_\_ 5. for a student being unprepared to participate in class?
- \_\_\_\_\_ 6. for a student writing assigned papers well?
- \_\_\_\_\_ 7. for a student understanding assigned homework readings?
- \_\_\_\_\_ 8. for a student not understanding a class discussion?
- \_\_\_\_\_ 9. for a student understanding the teacher's lecture?
- \_\_\_\_\_ 10. for a student fooling around in class?
- \_\_\_\_\_ 11. for a student not taking notes in class?
- \_\_\_\_\_ 12. for a student doing homework assignments correctly?
- \_\_\_\_\_ 13. for a student being interested in school?
- \_\_\_\_\_ 14. for a student remembering information from assigned readings?
- \_\_\_\_\_ 15. for a student non concentrating in class?
- \_\_\_\_\_ 16. for a student not valuing good grades in school?
- \_\_\_\_\_ 17. for a student giving extra effort when needed?
- \_\_\_\_\_ 18. for a student just going through the motions without really trying in class?

- \_\_\_\_19. for a student seeing school as important to his or her future success?  
\_\_\_\_20. for a student receiving poor grades in school?



## APPENDIX D

### Student-Professor Interaction Scale (SPIS)

Instructions: Listed below are a number of items concerning how you perceive your interactions with professors. Read each item and indicate to what degree it reflects how you feel most of the time, using the 7-point scale below. Base your responses on your interactions with college professors.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree

1. I feel that one or more professors are supportive of me.	1	2	3	4	5	6	7
2. I believe that there is at least one professor who cares about my well-being.	1	2	3	4	5	6	7
3. I believe there is a professor who is concerned about my future.	1	2	3	4	5	6	7
4. I feel that professors generally care about me.	1	2	3	4	5	6	7
5. I have spent time with professors outside an academic setting.	1	2	3	4	5	6	7
6. I have a positive relationship with a professor outside of the classroom.	1	2	3	4	5	6	7
7. I have interacted with professors off campus.	1	2	3	4	5	6	7
8. Professors initiate contact with students after class.	1	2	3	4	5	6	7

9. Professors have encouraged me to go to graduate or professional school.	1	2	3	4	5	6	7
10. At least one or more professors have provided me with guidance in developing my career goals.	1	2	3	4	5	6	7
11. My professors have encouraged me to succeed in achieving my academic dreams.	1	2	3	4	5	6	7
12. My professors provide information about career and academic options.	1	2	3	4	5	6	7
13. My professors demonstrate familiarity with my culture.	1	2	3	4	5	6	7
14. I feel connected with faculty.	1	2	3	4	5	6	7
15. I have faculty that I can identify with on campus.	1	2	3	4	5	6	7
16. I feel a bond with one or more faculty.	1	2	3	4	5	6	7
17. I am comfortable approaching professors.	1	2	3	4	5	6	7
18. I feel comfortable approaching professors to discuss my grades and class work.	1	2	3	4	5	6	7
19. I feel comfortable asking my professors questions about concepts that are not clear.	1	2	3	4	5	6	7
20. I have not felt intimidated by my professors.	1	2	3	4	5	6	7
21. Professors are accessible outside of class.	1	2	3	4	5	6	7
22. Professors are available when I need guidance or assistance.	1	2	3	4	5	6	7
23. My professors make time to talk to me when needed outside of class time.	1	2	3	4	5	6	7
24. Although professors are busy, I can talk to one or more of them whenever I need to.	1	2	3	4	5	6	7
25. Professors show respect for all students in the classroom.	1	2	3	4	5	6	7
26. My professors are clear about expectations regarding coursework.	1	2	3	4	5	6	7
27. When I interact with my professors I feel s/he truly listens to me.	1	2	3	4	5	6	7
28. My professors are alert and attentive when I approach them.	1	2	3	4	5	6	7
29. When I interact with my professors I feel s/he cares about my question or problem.	1	2	3	4	5	6	7

30. Professors show respect for ethnic minority students.	1	2	3	4	5	6	7
31. When I interact with my professors I feel understood.	1	2	3	4	5	6	7
32. My professors value my contributions and opinions.	1	2	3	4	5	6	7
33. My professors seem comfortable interacting with students outside of their racial/ethnic group.	1	2	3	4	5	6	7
34. My professors seem distant and uninterested to me.	1	2	3	4	5	6	7
35. Professors do not value talking with students outside of the classroom	1	2	3	4	5	6	7
36. I do not believe my professors treat me fairly.	1	2	3	4	5	6	7
37. I feel isolated from my professors.	1	2	3	4	5	6	7
38. The quality of my relationships with professors impacts my academic performance.	1	2	3	4	5	6	7
39. I work harder to succeed in a class if I know my professor genuinely cares about me.	1	2	3	4	5	6	7
40. I think a positive relationship with a professor would enhance my experience at this school.	1	2	3	4	5	6	7

## **APPENDIX E**

### **Informed Consent Form**

#### **RESEARCH PROCEDURES**

This research is being conducted to study the collegiate experience. If you agree to participate, you will fill out an online survey which may take anywhere from 15-30 minutes.

#### **RISKS**

There are no more than minimal risks associated with this study.

#### **BENEFITS**

By participating in the study, you will be contributing to the fields of higher education and educational psychology.

#### **CONFIDENTIALITY**

The data in this study will be confidential. Your name will not be included in any of the data reported.

#### **PARTICIPATION**

Your participation in this study is voluntary and you may withdraw at anytime. If you decide to withdraw out of the study, there are no penalties to you or any other parties.

#### **CONTACT**

Michelle Gnoleba at George Mason University is conducting this research study. She may be reached at [mgnoleba@gmu.edu](mailto:mgnoleba@gmu.edu) for questions pertaining to the study. You may also contact faculty member and Chair of this thesis project, Dr. Anastasia Kitsantas, at [akitsant@gmu.edu](mailto:akitsant@gmu.edu). You may contact the George Mason University Office of Research Subject Protections at 703-993-1000 if you have questions or comments regarding your rights as a participant in the research. This research has been reviewed according to George Mason University procedures governing your participation in this research.

**CONSENT** I have read this form and agree to participate in this study.

Name:

Date:

## APPENDIX F

### IRB Approval Document



### Office of Research Integrity and Assurance

Research Hall, 4400 University Drive, MS 6D5, Fairfax, Virginia 22030  
Phone: 703-993-5445; Fax: 703-993-9590

DATE: April 28, 2015

TO: Anastasia Kitsantas  
FROM: George Mason University IRB

Project Title: [739285-1] Examining the Relationships among Faculty-student Interactions, Self-efficacy, Self-regulation, and Academic Achievement of undergraduate students

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: April 28, 2015

REVIEW CATEGORY: Exemption category # 2

Thank you for your submission of New Project materials for this project. The Office of Research Integrity & Assurance (ORIA) has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

Please remember that all research must be conducted as described in the submitted materials.

Please note that any revision to previously approved materials must be submitted to the ORIA prior to initiation. Please use the appropriate revision forms for this procedure.

If you have any questions, please contact Lorna Richards at (703) 993-4121 or [Ircha22@gmu.edu](mailto:Ircha22@gmu.edu). Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within George Mason University IRB's records.

## REFERENCES

- American Council on Education. (1949) *Student personnel point of view*. Washington, DC: Author. Retrieved May 6, 2015, from <http://www.myacpa.org/pub/documents/1949.pdf>
- Ancis, J. R., Sedlacek, W. E., & Mohr, J. J. (2000). Student perceptions of campus cultural climate by race. *Journal of Counseling & Development, 78*(2), 180-185. doi:10.1002/j.1556-6676.2000.tb02576.x
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215. doi: 10.1080/01973530701866664
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*(1), 1-26. doi: 10.1146/annurev.psych.52.1.1
- Bembenutty, H. (2007). Self-regulation of learning and academic delay of gratification: Gender and ethnic differences among college students. *Journal of Advanced Academics, 18*(4), 586-616. doi: 2008-02248-005
- Bembenutty, H., & Karabenick, S. A. (1998). Academic delay of gratification. *Learning and Individual Differences, 10*(4), 329-346. doi: doi:10.1016/S1041-608080126-5
- Bensimon, E. M. (2005). Closing the achievement gap in higher education: An organizational learning perspective. In A. Kezar (Eds.), *Organizational Learning in Higher Education* (pp. 99-111). doi:10.1002/he.182
- Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and Instruction, 7*(2), 161-186. doi: 10.1016/S0959-4752(96)00015-1
- Bond, M. L., Cason, C. L., & Baxley, S. M. (2015). Institutional support for diverse populations: Perceptions of Hispanic and African-American students and program faculty. *Nurse educator, 40*(3), 134-138. doi: 10.1177/1538192715584192
- Britner, S. L., & Pajares, F. (2001). Self-efficacy beliefs, motivation, race, and gender in middle school science. *Journal of Women and Minorities in Science and Engineering, 7*(4), 485-499. doi: 10.1615/JWomenMinorScienEng.v7.i4.10



- Butler, D. L. (1998). The strategic content learning approach to promoting self-regulated learning: A report of three studies. *Journal of Educational Psychology, 90*(4), 682-697. doi: <http://dx.doi.org/10.1037/0022-0663.90.4.682>
- Campbell, T. A., & Campbell, D. E. (2007). Outcomes of mentoring at-risk college students: Gender and ethnic matching effects. *Mentoring & Tutoring, 15*(2), 135-148. doi: 10.1080/13611260601086287
- Chang, M. J., Chang, J. C., & Ledesma, M. C. (2005). Beyond magical thinking: Doing the real work of diversifying our institutions. *About Campus, 10*(2), 9-16. doi: 10.1002/abc.124
- Close, W., & Solberg, S. (2008). Predicting achievement, distress, and retention among lower-income Latino youth. *Journal of Vocational Behavior, 72*(1), 31-42. doi:10.1016/j.jvb.2007.08.007
- Cokley, K., Komarraju, M., Patel, N., Castillon, J., Rosales, R., Pickett, R., & Pang, L. S. (2004). Construction and initial validation of the Student-Professor Interaction Scale. *College Student Affairs Journal, 24*(1), 32-50. doi: 10.1111/j.1468-2958.2007.00312.x
- Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the literature between 1990 and 2007. *Research in Higher Education, 50*(6), 525-545. doi: 10.1007/s11199-006-8866-9
- Crown, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of consulting psychology, 24*(4), 349. doi: 10.1177/0013164493053003024
- Dabbagh, N., & Kitsantas, A. (2004). Supporting self-regulation in student-centered web-based learning environments. *International Journal on E-learning, 3*(1), 40-47. doi: 2005-06641-005
- DeWitz, S. J., Woolsey, M. L., & Walsh, W. B. (2009). College student retention: An exploration of the relationship between self-efficacy beliefs and purpose in life among college students. *Journal of College Student Development, 50*(1), 19-34. doi: 10.1080/00224499909552008
- EdTrust (2000). *Closing the achievement gap*. Retrieved May 6, 2015, from <http://edtrust.org/>
- Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72*(1), 218. doi: 0022-3514/97/3.00

- Feldman, K., & Newcomb, T. (1969). *The impact of college on students*. San Francisco: Jossey-Bass.
- Frankl, V. E. (1963). *Man's search for meaning*. New York: Washington Square Press.
- Frankl, V. E. (1969). *The will to meaning: Foundations and applications of logotherapy*. New York: New American Library.
- Gore, P. A., & Leuwerke, W. C. (2000). Predicting occupational considerations: A comparison of self-efficacy beliefs, outcome expectations, and person-environment congruence. *Journal of Career Assessment*, 8(3), 237-250. doi: <http://dx.doi.org/10.1177/106907270000800303>
- Gottfried, A. E. (1990). Academic intrinsic motivation in young elementary school children. *Journal of Educational Psychology*, 82(3), 525. doi: <http://dx.doi.org/10.1037/0022-0663.82.3.525>
- Gusa, D. L. (2010). White institutional presence: The impact of Whiteness on campus climate. *Harvard Educational Review*, 80(4), 464-490. doi: <http://dx.doi.org/10.17763/haer.80.4.p5j483825u110002>
- Grove, N., J. Hershberger, & S. Bretz. 2008. Impact of a spiral organic curriculum on student attrition and learning. *Chemical Education Research and Practice*, 9: 157–162. doi: 10.1080/87567555.2011.627576
- Hurtado, S. (1992). The campus racial climate: Contexts of conflict. *The Journal of Higher Education*, 63(5), 539-569. doi: 10.2307/1982093
- Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 17, 300-312. doi: <http://dx.doi.org/10.1037/0012-1649.17.3.300>
- Harris, F., & Bensimon, E. M. (2007). The equity scorecard: A collaborative approach to assess and respond to racial/ethnic disparities in student outcomes. *New Directions for Student Services*, 2007(120), 77-84. doi: 10.1002/ss.259
- Hippel, W. V., Lerner, J. S., Gregerman, S. R., Nagda, B. A., & Jonides, J. (1998). Undergraduate student-faculty research partnerships affect student retention. *The Review of Higher Education*, 22(1), 55-72. doi: <http://dx.doi.org/10.1037/0735-7028.23.3.203>

- Hsieh, P., Sullivan, J. R., & Guerra, N. S. (2007). A closer look at college students: Self-efficacy and goal orientation. *Journal of Advanced Academics, 18*, 454-476. doi: 10.4219/jaa-2007-500
- Kim, Y. K., & Sax, L. J. (2009). Student–faculty interaction in research universities: Differences by student gender, race, social class, and first-generation status. *Research in Higher Education, 50*(5), 437-459. doi: 10.1007/s11162-009-9127-x
- Kitsantas, A., & Zimmerman, B. J. (2009). College students' homework and academic achievement: The mediating role of self-regulatory beliefs. *Metacognition and Learning, 4*(2), 97-110. doi: 10.1007/s11409-008-9028-y
- Komarraju, M., Musulkin, S., & Bhattacharya, G. (2010). Role of student–faculty interactions in developing college students' academic self-concept, motivation, and achievement. *Journal of College Student Development, 51*(3), 332-342. doi:10.1037/0022-3514.70.3.491
- Kuh, G. D., & Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *The Review of Higher Education, 24*(3), 309-332. doi: 10.1353/rhe.2001.0005
- Kuh, G. D. (2008a). *High-impact educational practices: What they are, who has access to them, and why they matter*. Washington, DC: Association of American Colleges and Universities.
- Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2011). *Student success in college: Creating conditions that matter*, Jossey-Bass and American Association for Higher Education San Francisco.
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1986). Self-efficacy in the prediction of academic performance and perceived career options. *Journal of Counseling Psychology, 33*(3), 265-269. doi: <http://dx.doi.org/10.1037/0022-0167.33.3.265>
- Lent, R. W., & Hackett, G. (1987). Career self-efficacy: Empirical status and future directions. *Journal of vocational Behavior, 30*(3), 347- 382 doi: 10.1177/089453
- Lynch, M., & Engle, J. (2010). Big gaps, small gaps: Some colleges and universities do better than others in graduating African-american students. *College Results Online 1*(1), 1-8. doi: 10.1111/j.1471-6402.2010.01566.x
- Meece, J. L., Blumenfeld, P. C., & Hoyle, R. H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology, 80*(4), 514-523. doi: 0022-06f3/88/00.75

- Mena, F. J., Padilla, A. M., & Maldonado, M. (1987). Acculturative stress and specific coping strategies among immigrant and later generation college students. *Hispanic Journal of Behavioral Sciences*, 9(2), 207-225. doi: 10.1177/07399863870092006
- Miller, S., Heafner, T., & Massey, D. (2009). High-school teachers' attempts to promote self-regulated learning: "I may learn from you, yet how do I do it?" *The Urban Review*, 41(2), 121-140. doi: 10.1007/s11256-008-0100-3
- 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. doi: 10.1111/j.1471-6402.1998.tb00173
- Midgley, C., Maehr, M. L., & Urdan, T. (1993). Patterns of adaptive learning survey (PALS). University of Michigan. doi: <http://dx.doi.org/10.1111/jora.12113>
- 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. doi: <http://dx.doi.org/10.1037/0022-0167.38.1.30>
- Nettles, M. T., Thoeny, A. R., & Gosman, E. J. (1986). Comparative and predictive analyses of Black and White students' college achievement and experiences. *Journal of Higher Education*, 57, 289–318. doi: 10.1002/j.1556-6676.2000.tb02576.x
- Nolen, S. B. (1988). Reasons for studying: Motivational orientations and study strategies. *Cognition and Instruction*, 5(4), 269-287. doi: 10.1207/2153269xci0504\_2
- Ong, A. D., Phinney, J. S., & Dennis, J. (2006). Competence under challenge: Exploring the protective influence of parental support and ethnic identity in Latino college students. *Journal of Adolescence*, 29(6), 961-979. doi: 10.1016/j.adolescence.2006.04.010
- Owen, S., & Froman, R. (1988). Development of a college academic self-efficacy scale. Paper presented at the annual meeting of the National Council on Measurement in Education, New Orleans, LA
- Pascarella, E. T. (2006). How college affects students: Ten directions for future research. *Journal of College Student Development*, 47(5), 508-520. doi: 10.1353/csd.2006.0060

- Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82(1), 33. doi: <http://dx.doi.org/10.1016/j.lindif.2015.03.025>
- Pintrich, P. R., Smith, D. A., García, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and Psychological Measurement*, 53(3), 801-813. doi: <http://dx.doi.org/10.1007/s10803-013-1948-y>
- Porter, S. R., Whitcomb, M. E., & Weitzer, W. H. (2004). Multiple surveys of students and survey fatigue. *New Directions for Institutional Research*, 2004(121), 63-73. doi: 10.1002/ir.97
- Roberts, J., & Styron, R. (2010). Student satisfaction and persistence: Factors vital to student retention. *Research in Higher Education Journal*, 6(3), 1-18. doi: 10.1007/BF00288320
- Santos, S.J., & Reigadas, E. T. (2002). Latinos in higher education: An evaluation of a university faculty mentoring program. *Journal of Hispanic Higher Education*, 1(1), 40-50. Retrieved from <http://jhh.sagepub.com/content/1/1/40.full.pdf+html>
- Sawyer, R. J., Graham, S., & Harris, K. R. (1992). Direct teaching, strategy instruction, and strategy instruction with explicit self-regulation: Effects on the composition skills and self-efficacy of students with learning disabilities. *Journal of Educational Psychology*, 84(3), 340. doi: 10.3102/00346543075001063
- Schultz, G. F. (1993). Socioeconomic advantage and achievement motivation: Important mediators of academic performance in minority children in urban schools. *The Urban Review*, 25(3), 221-232. doi:10.1016/S1041-6080(96)90015-1
- Schunk, D. H. (1996). *Learning theories: an educational perspective* (2<sup>nd</sup> ed.). Englewood Cliffs, NJ: Merrill.
- Schunk, D. H., & Zimmerman, B. J. (1994). *Self-regulation of learning and performance: Issues and educational applications*. Lawrence Erlbaum Associates, Inc.
- Schunk, D. H. (1989). Social cognitive theory and self-regulated learning. In B.J. Zimmerman & D.H. Schunk (eds.), *Self-regulated learning and academic achievement: Theory, research, and preactice* (pp. 83-110). New York: Springer-Verlag.
- Schunk, D. H., & Ertmer, P. A. (1999). Self-regulatory processes during computer skill acquisition: Goal and self-evaluative influences. *Journal of Educational Psychology*, 91(2), 251. doi: <http://dx.doi.org/10.1037/0022-0663.91.2.251>

- Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The Self-Efficacy Scale: Construction and validation. *Psychological Reports, 51*(2), 663-671. doi: <http://dx.doi.org/10.1037/a0037922>
- Siegel, R. G., Galassi, J. P., & Ware, W. B. (1985). A comparison of two models for predicting mathematics performance: Social learning versus math-anxiety. *Journal of Counseling Psychology, 32*, 531-538.1(1), 40-50. doi: 10.1177/019927509020
- Simons, P. R. J., & Beukhof, G. (1987). The regulation of learning. *Regulation of Learning, 3*-11. doi: <http://dx.doi.org/10.1111/ajsp.12058>
- Smith, H. M., & Betz, N. E. (2000). Development and validation of a scale of perceived social self-efficacy. *Journal of Career Assessment, 8*(3), 283-301. doi: <http://dx.doi.org/10.1007/s10964-014-0132-9>
- Snyder, T. D., & Dillow, S. A. (2013). Digest of Education Statistics, 2012. NCES 2014-2015. *National Center for Education Statistics*. doi: <http://dx.doi.org/10.1080/002>
- Solberg, V. S., O'Brien, K., Villareal, P., Kennel, R., & Davis, B. (1993). Self-efficacy and Hispanic college students: Validation of the College Self-Efficacy Instrument. *Hispanic Journal of Behavioral Sciences, 15*(1), 80-95. doi: <http://dx.doi.org/10.1111/ajsp.12058>
- Sonnenschein, J. L. (1983). Basic Achievement Skills Individual Screener. Cleveland: *The Psychological Corporation*. doi: <http://dx.doi.org/10.1007/BF01112109>
- Suen, H. K. (1983). Alienation and attrition of Black college students on a predominantly White campus. *Journal of College Student Personnel, 24*, 117-121. doi: 10.1008/j.1556-8857.2000.tb74269.x
- Thatch, E. C., & Murphy, K. L. (1995). Competencies for distance education professionals. *Educational Technology Research and Development, 43*, 57-72. doi: <http://dx.doi.org/10.1007/s10964-014-0132-9>
- Thile, E. L., & Matt, G. E. (1995). The ethnic mentor undergraduate program: A brief description and preliminary findings. *Journal of Multicultural Counseling and Development, 23*(2), 116-126. doi: 10.1002/j.2161-1912.1995.tb00605.
- Thomas, J. C., Wolters, C., Horn, C., & Kennedy, H. (2014). Examining relevant influences on the persistence of African-American College Students at a diverse urban university. *Journal of College Student Retention: Research, Theory & Practice, 15*(4), 551-573. doi: <http://dx.doi.org/10.2190/CS.15.4.e>

- Vogt, C. M. (2008). Faculty as a critical juncture in student retention and performance in engineering programs. *Journal of Engineering Education*, 97(1), 27-36.551-573.
- 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. doi: 10.1353/csd.0.0109
- Welch, G. F. (2002). A new faculty orientation program: Building a core of new faculty to shape the future of the college. *New Directions for Community Colleges*, (120), 11-16. doi:10.1002/cc.84
- Willis, K. (2011). *Theories and practices of development*. Taylor & Francis.  
doi: <http://dx.doi.org/10.1037/a0036038>
- Young, M. R. (2005). The motivational effects of the classroom environment in facilitating self-regulated learning. *Journal of Marketing Education*, 27(1), 25-40. doi: 10.1177/0273475304273346
- Zajacova, A., Lynch, S. M., & Espenshade, T. J. (2005). Self-efficacy, stress, and academic success in college. *Research in Higher Education*, 46(6), 677-706. doi: 0.1120/87567445.2011.628896
- Zimmerman, B. J. (1998). *Developing self-fulfilling cycles of academic regulation: An analysis of exemplary instructional models*. Guilford Publications.
- Zimmerman, B.J. (2000). Attainment of self-regulation: A social cognitive perspective. In M. Boekaerts, P.R. Pintrich, & M. Zeidner (Eds.), *Handbook of Self-Regulation* (pp. 13-39). San Diego, CA: Academic Press
- Zimmerman, B. J., & Pons, M. M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American Educational Research Journal*, 23(4), 614-628. doi: 10.3102/00028312023004614
- Zimmerman, B. J., & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, 82(1), 51. Doi: <http://dx.doi.org/10.1080/0022.5479>
- Zimmerman B.J. (2006). Development and adaptation of expertise: The role of self-regulatory processes and beliefs. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 705–722). New York: Cambridge University Press

Zimmerman, B. J., & Kitsantas, A. (2005). Homework practices and academic achievement: The mediating role of self-efficacy and perceived responsibility beliefs. *Contemporary Educational Psychology, 30*(4), 397-417. doi:10.1016/j.cedpsych.2005.05.003

Zimmerman, B., & Kitsantas, A. (2007). Reliability and validity of self-efficacy for learning form (SELF) scores of college students. *Zeitschrift für Psychologie/Journal of Psychology, 215*(3), 157-163. doi: <http://dx.doi.org/10.1177/1521025115571074>



## **BIOGRAPHY**

Michelle Andre Gnoleba grew up Dale City, Virginia. She attended the University of Mary Washington and obtained a Bachelor of Science in Psychology in 2013. In 2015, she received a Master of Arts in Interdisciplinary Studies with a concentration in Higher Education at George Mason University. She serves as an Academic and Career Advisor at James Madison University.