

Exploring Factors Associated with Academic Self-Efficacy

---

A Thesis

Presented to

The Faculty of the College of Education and Behavioral Sciences

Houston Baptist University

---

In Partial Fulfillment

of the Requirements for the Degree of

Master of Arts in Psychology

---

by

Rickki Daniel DeLeon

May 2020

Exploring Factors Associated with Academic Self-Efficacy

by

Rickki Daniel DeLeon

---

APPROVED:

---

Dr. Joseph P. Pelletier  
Thesis Chair

---

Dr. Anita S. Horton  
Committee Member

---

Dr. Elizabeth Trevino  
Committee Member

Approved:

---

Dr. Julie Fernandez

Dean, College of Education and Behavioral Sciences

## **DEDICATION**

To students of all academic levels and to the educators that teach, critique and encourage us as a means of helping us gain and improve knowledge and skills.

## **ABSTRACT**

Academic self-efficacy (ASE) is the level of confidence one has in his or her ability to meet academic goals. Research has demonstrated the significance of ASE to performance; however, many university students lack ASE, thereby hindering their performance. This study provides information regarding factors that facilitate ASE, which in turn support achievement. The factors explored were performance accomplishments (PA), educator support, support from family and friends and vicarious learning via academic role-models. This study found no significant relationship between ASE and PA. However, results yielded a significant correlation between ASE and educator support as well as between ASE and support from family and friends. Finally, this study found no significant relationship between ASE and academic role-models. Ultimately, ASE is influenced by the amount of support students perceive to have available to them but is not contingent upon historical factors, such as prior experience, nor is ASE significantly influenced by their family's academic experiences.

**KEY WORDS:** self-efficacy, academic self-efficacy, sources of efficacy

Approved:

---

Dr. Joseph P. Pelletier  
Chair, Thesis Committee

## **ACKNOWLEDGEMENTS**

I would like to thank my family for their constant and reliable support. I would also like to thank Dr. Pelletier, Dr. Horton and Dr. Trevino for lending their expertise and time. Their guidance is greatly appreciated. Thank you.

## TABLE OF CONTENTS

	<b>Page</b>
DEDICATION .....	iii
ABSTRACT.....	iv
ACKNOWLEDGMENTS.....	v
TABLE OF CONTENTS.....	vi
CHAPTERS	
I. INTRODUCTION .....	1
Statement of the Problem.....	1
Definition of Terms.....	1
Theoretical Framework.....	4
Purpose and Significance of the Study.....	4
Summary.....	7
II. LITERATURE REVIEW.....	7
Academic Self-Efficacy and Academic Achievement.....	7
Performance Accomplishments and ASE.....	9
Verbal Persuasion via Educator Support, and ASE.....	12
Verbal Persuasion via Environment Social Support, and ASE.....	15
Vicarious Learning Experiences and ASE.....	17
Summary.....	20
III. METHODOLOGY .....	22
Sampling and Participant Collection.....	22
Procedure .....	23

Measures . . . . .	24
Statistics . . . . .	26
IV. RESULTS . . . . .	26
Hypothesis One . . . . .	27
Hypothesis Two . . . . .	27
Hypothesis Three . . . . .	28
Hypothesis Four . . . . .	28
Post-hoc Analysis One . . . . .	28
Post-hoc Analysis Two . . . . .	29
Post-hoc Analysis Three . . . . .	29
V. DISCUSSION . . . . .	29
Implications . . . . .	34
Limitations . . . . .	35
Future Research . . . . .	36
Conclusion . . . . .	36
REFERENCES . . . . .	38
TABLES . . . . .	43
APPENDIX A . . . . .	50
APPENDIX B . . . . .	51
APPENDIX C . . . . .	52
APPENDIX D . . . . .	53
APPENDIX E . . . . .	54
APPENDIX F . . . . .	56

## INTRODUCTION

### *Statement of the Problem*

Education is an essential ingredient to future success. However, attaining adequate education to create opportunities for one's financial and vocational future can prove difficult and expensive, requiring one to invest and sacrifice time, money, and other resources. For this reason, many students lack the efficacy, commitment, and motivation to pursue or to continue their studies. As students begin to encounter difficulties in grade school, they are less likely to finish high school or pursue a post-high school education. Unfortunately, many students withdraw from school and abandon their academic goals due to academic challenges. Additionally, researchers have noted that academic achievement is positively correlated with income (Bureau of Labor Statistics, 2019; Chee, Shorty & Kurpius, 2018). Nevertheless, there are many interventions that can be introduced to help students accomplish their goals. Before tutoring or other academic interventions can truly be successful, faculty, friends and family must help students establish and maintain efficacy in their personal abilities to learn course material, acquire new skills and successfully complete academic related tasks.

### *Definition of Terms*

Bandura defined self-efficacy as the belief one has in his or her ability to successfully complete a task (1977). Similarly, academic self-efficacy (ASE) is defined as the level of confidence a student has in his or her ability to learn and develop new, academic skills and meet academic goals (Baleghizadeh & Mortazavi, 2014; Bartimote-Aufflick, Bridgeman, Walker, Sharma & Smith, 2016; Boakye, 2015; Budescu

& Silverman, 2016; Byrne, Flood & Griffin, 2014; Chee, et al., 2018; Chemers, Hu & Garcia, 2001; Edward-Joseph & Baker, 2014; Jordan & Carden, 2017; Mendez & Bauman, 2018; Pajars & Miller, 1994; Phan, 2014; Raelin et al., 2014; Razek & Coyner, 2014; Rigali-Oiler & Kurpius, 2013; Stagg, Eaton & Sjoblom, 2018; Shahed, Hashmi & Hashmi, 2016; Stewart & Alrutz, 2014; White & Perrone-McGovern, 2017; Wood, Newman & Harris, 2015; Wright, Perrone-McGovern, Boo & White, 2014; Zheng, Liang & Tsai, 2017). Many factors are associated with helping students develop a healthy sense of efficacy; however, in the absence of these factors, students are at greater risk of failing to develop the confidence in their abilities to be successful in school, thereby compromising their actual abilities for success.

According to Bandura's self-efficacy theory, there are four primary sources of efficacy: performance accomplishments, social/verbal persuasion, vicarious learning experiences and physiological or affective state (Bandura, 1977; Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley, Browne & Kelley, 2017; Byars-Winston, Diestelmann, Savoy & Hoyt, 2017; Byrne et al., 2014; Edward-Joseph & Baker, 2014; Raelin et al., 2014; Stagg et al., 2018; Stewart & Alrutz, 2014; Zheng et al., 2017).<sup>1</sup> Performance accomplishments, sometimes referred to as mastery experiences or previous experiences, refers to one's past experiences and how she or he interprets said experiences (Bandura, 1977; Baleghizadeh & Mortazavi, 2014; Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley et al., 2017; Byars-Winston et al., 2017; Byrne et al., 2014; Edward-Joseph & Baker, 2014; Phan, 2014; Raelin et al., 2014; Stagg et al., 2018;

---

<sup>1</sup> Razek and Coyner (2014) refer to the four sources of efficacy using the terms: cognitive, motivational, affective and selective.

Stewart & Alrutz, 2014; Zheng et al., 2017). For example, receiving a passing grade in a written assignment might not be interpreted as a success if the grade is less than what the student desired or less than what she or he worked to achieve or feels that is deserved.

Verbal persuasion (VP), sometimes referred to as social persuasion, is described as the encouragement one receives from others for the purpose of motivating a person that he or she can cope with what has proved challenging in the past (Bandura, 1977). In terms of academia, verbal persuasion refers to the encouragement one receives for completing school related tasks, objectives, and assignments. Additionally, verbal persuasion refers to the feedback a student receives about an assignment or project. Encouragement and feedback can originate from family, friends, peers, classmates, faculty, counselors or other university staff (Baleghizadeh & Mortazavi, 2014; Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley et al., 2017; Budescu & Silverman, 2016; Byars-Winston et al., 2017; Byrne et al., 2014; Edward-Joseph & Baker, 2014; Jordan & Carden, 2017; McIlroy, Palmer-Conn, Lawler, Poole, Ursavas, 2017; Phan, 2014; Raelin et al., 2014; Stagg et al., 2018; Stewart & Alrutz, 2014; Wright et al., 2014; Zheng et al., 2017).

Vicarious learning (VL) refers to learning by observing similar others (role-models) complete similar tasks in similar situations (Baleghizadeh & Mortazavi, 2014; Bandura, 1977; Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley et al., 2017; Byars-Winston et al., 2017; Byrne et al., 2014; Edward-Joseph & Baker, 2014; Jordan & Carden, 2017; Phan, 2014; Razek & Coyner, 2014; Rigali-Oiler & Kurpius, 2013; Stagg et al., 2018; Stewart & Alrutz, 2014; Zheng et al., 2017). Finally, how one interprets their physiological or affective state can influence one's efficacy. For example, feeling anxious can be interpreted as being unprepared or unequipped to face an obstacle, rise to a challenge or complete a task (Baleghizadeh & Mortazavi, 2014; Bandura, 1977;

Bartimote-Aufflick et al., 2016; Bradley et al., 2017; Byars-Winston et al., 2017; Byrne et al., 2014; Edwards-Joseph & Baker, 2014; Stagg et al., 2018; Stewart & Alrutz, 2014; Zheng et al., 2017). Furthermore, Boakye (2015). mentioned that a stressful learning environment that elicits anxiety will also prove detrimental to one's academic self-efficacy. Additionally, Bandura (1977) mentioned that anxiety and fear inhibit performance therefore, people are more likely to expect success when they are not in an aversive, affective state. For instance, if a student is feeling anxious then he or she may fixate on potential failure, further increasing their anxiety. Ultimately, feeling stressed or anxious about school will significantly compromise one's academic self-efficacy. Therefore, faculty must work to ensure a positive learning environment that promotes efficacy, thereby better preparing students to meet their academic challenges.

### *Theoretical Framework*

Albert Bandura's social learning theory demonstrated how people learn from one another via modeling, observation, and imitation. Additionally, Bandura is known for demonstrating how self-beliefs influence the tasks that one will attempt as well as the level of effort, resources, and commitment one will invest in said tasks (1977). The present research aims to further investigate Bandura's self-efficacy theory to better understand the methods educators can utilize to facilitate academic success, among their perspective students.

### *Purpose and Significance of the Study*

Bandura explained that self-efficacy influences one's level of motivation, persistence, and commitment to achieve a goal even under stressful circumstances (1977). Previous research has expanded on self-efficacy theory and focused efficacy in the realm of academia, demonstrating a significant relationship between academic self-

efficacy and grade point average (Bartimote-Aufflick et al., 2016; Mendez & Bauman, 2018; Mcllroy et al., 2017; Raelin et al., 2014). Research has also demonstrated the positive relationship between ASE and the utilization of effective study habits (Mcllroy et al., 2017). Additionally, past studies have supported the relationship between ASE and persistence, perseverance and resilience (Baleghizadeh & Mortazavi, 2014; Boakye, 2015; Byars- Winston et al., 2017; Byrne et al., 2014; Chee et al., 2019; Chemers et al., 2001; Jordan & Carden, 2017; Mcllroy et al., 2017; Mendez & Bauman, 2018; Pajares & Miller, 1994; Phan, 2014; Razek & Coyner, 2014; Rigali-Oiler & Kurpius, 2013; Shahed, 2016; Stagg et al., 2018; Stewart & Alrutz, 2014; Wood et al., 2015). Furthermore, ASE was associated with school retention (Budescu & Silverman, 2016; Mcllroy et al., 2017; Raelin et al., 2014; Rigali-Oiler & Kurpius, 2013). Finally, higher levels of self-efficacy were associated with college completion (White & Perrone-McGovern, 2017), college adjustment and college satisfaction (Wood et al., 2015). Alternatively, decreased efficacy was associated with higher levels of anxiety and stress (Bradley et al., 2017; Mendez & Bauman, 2018; Wood et al., 2015), with lower income (Chee et al., 2019) and with self-doubt (Stagg et al., 2018). In addition to the contributions ASE makes to academic success, research has also illustrated the risk factors that can prove detrimental to a student's self-efficacy thereby threatening future success. For example, a student who perceives lacking social support might also perceive more barriers to success and fewer resources to aid them in their endeavors, which will in turn prove discouraging and ultimately, hinder their efficacy and their academic performance (Wright et al., 2014). By gaining awareness of these potential threats to efficacy, educators can better serve their respective students. Ultimately, ASE is associated with various aspects of a student's academic life and future. As such, it is essential for educators to be well informed about

what they can do to facilitate their students' self-efficacy so that they may better help their students meet their goals. The objective of this study is to provide information regarding potential protective factors that may facilitate ASE and help students along their academic pursuits.

The factors that this study explored represent three of the four sources of efficacy previously described. The relationship between performance accomplishments and ASE was studied by evaluating the association between a student's prior academic experience and ASE. Students were asked to recall a previous experience in which they attempted to successfully complete an assignment. Students were prompted to recall their previous experience as either one of failure or one of success. It was hypothesized that students recalling a previous positive academic experience would show significantly higher self-efficacy than those recalling a negative academic experience. Secondly, this study explored the relationship between verbal persuasion and ASE by evaluating two factors of VP. The first such factor that was evaluated concerned the level of support students perceived to have from their respective professors in terms of availability and encouragement. It was hypothesized that perceived professor support would be positively correlated with high ASE. The second factor of verbal persuasion examined the relationship between perceived environmental social support and ASE. For the purposes of this study, environmental support is defined as support received from family and friends. Additionally, support refers to receiving encouragement for a student's decision to attend and pursue a college education. It was hypothesized that environmental social support would be positively correlated with ASE. Finally, to evaluate the relationship between vicarious learning and ASE, this study examined the influence that academic role-models have on efficacy. For the purpose of this study, the term academic role-

models refers to family members who have attended an institution of higher education. It was hypothesized that there would be a significant difference in the level of ASE demonstrated by students with academic role-models compared to students without.

### *Summary*

The beliefs a student has regarding his or her ability to succeed in school are significant in determining the amount of dedication, effort, and commitment one will devote to accomplishing one's academic goals. Students who have internalized negative self-beliefs are at a disadvantage and are at increased risk of abandoning their academic endeavors. Therefore, it is incumbent for faculty and university staff to learn more about the different methods that can be utilized to assist students in realizing their full potential.

## **LITERATURE REVIEW**

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

Academic self-efficacy is inextricably associated with academic achievement, as measured by exam scores, grade point average, attendance, retention, persistence and resilience (Baleghizadeh & Mortazavi, 2014; Bartimote- Aufflick, et al., 2016; Boakye, 2015; Bradley, et al., 2017; Budescu & Silverman, 2016; Byars-Winston et al., 2017; Byrne et al., 2014; Chee et al., 2018; Chemers et al., 2001; Edwards-Joseph & Baker, 2014; Jordan & Carden, 2017; Mendez & Bauman, 2018; Pajares & Miller, 1994; Phan, 2014; Raelin, et al., 2014; Razek & Coyner, 2014; Shahed et al., 2016; Stagg, et al., 2018; White & Perrone-McGovern, 2017; Wood et al., 2015; Zheng, et al., 2017). According to researchers, ASE is one of the more salient and reliable predictors of academic achievement (Baleghizadeh & Mortazavi, 2014; Bartimote- Aufflick, et al., 2016; Byrne et al., 2014; Pajares & Miller, 1994; Phan, 2014). Studies have shown that

efficacy is a better predictor of success compared to anxiety (Chemers et al., 2001; Pajares & Miller, 1994), demographic variables or entrance exams (Budescu & Silverman, 2016; Byrne et al., et al., 2014). Furthermore, efficacy is more reliable in predicting success compared to student personality (McIlroy et al., 2017), or a student's skills (Edwards-Joseph & Baker, 2014), prior experience, aptitude, or gender (Pajares & Miller, 1994). However, different factors are more significant depending on the person and the context (Bartimote-Aufflick et al., 2016). As such, exploring multiple factors that contribute to the development or maintenance of ASE will help in fostering students' confidence in acquiring the skills necessary to succeed in class and in school.

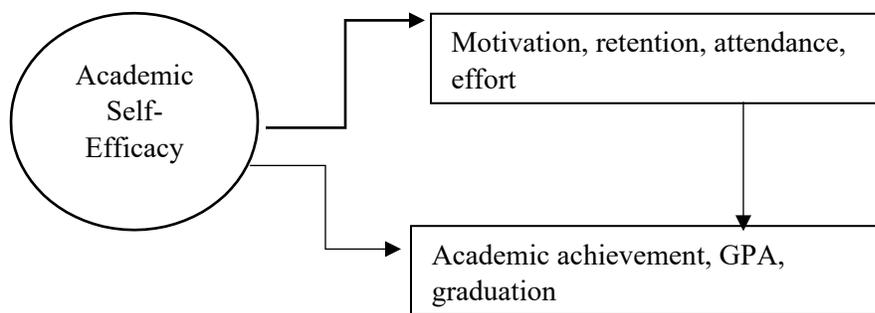
Academic self-efficacy affects achievement in many ways. For example, ASE influences how one interprets the difficulty of a task or assignment. Students with less ASE will interpret assignments as being more difficult than they are, which will cause them to experience higher levels of stress and anxiety compared to pupils demonstrating higher levels of self-efficacy (Byrne, et al., 2014; Chee et al., 2018; Chemers et al., 2001; Edwards-Joseph & Baker, 2014; Mendez & Bauman, 2018; Wright et al., 2014).

Academic self-efficacy is also associated with one's motivation and persistence to successfully complete objectives, goals, work, or school and with the effort invested in goal achievement. Furthermore, efficacy influences a student's decision concerning which tasks or goals he or she will attempt (Baleghizadeh & Morazai, 2014; Bartimote-Aufflick et al., 2016; Boakye, 2015; Byars-Winston et al., 2017; Chee et al., 2018; Chemers et al., 2001; Edwards-Joseph & Baker, 2014; Jordan & Carden, 2017; McIlroy et al., 2017; Mendez & Bauman, 2018; Pajares & Miller, 1994; Phan, 2014; Raelin et al., 2014; Rigali-Oiler & Kurpius, 2013; Shaded et al., 2016; Stagg et al., 2018; Stewart & Alrutz, 2014; White & Perrone-McGovern, 2017; Wood, Newman & Harris, 2015).

Additionally, low efficacy is associated with a decrease in seeking help from instructors, thereby hindering the probability that a student will gain mastery of a task or make any significant improvements in class (Bradley et al., 2017; Byrne et al., 2014; Wood et al., 2015). Figure 1 illustrates the direct and indirect relationship ASE has with academic achievement.

**Figure 1**

*Pathways of Academic Self-Efficacy to Academic Achievement*



*Performance Accomplishments and ASE*

Previous research has described the influence that experience, or performance accomplishments, has on ASE. Experience is one of the most influential predictors of ASE (Bartimote-Aufflick et al., 2016; Boakye, 2015; Byars- Winston et al., 2017; Byrne et al., 2014; Stagg et al., 2018; Stewart & Alrutz, 2014). Performance accomplishments help facilitate ASE in that previous experiences serve as concrete proof of one’s accomplishments and failures, proving to students that success is possible (Baleghizadeh & Mortazavi, 2014; Boakye, 2015; Bradley et al., 2017; Edwards-Joseph & Baker, 2014; McIlroy et al., 2017). For instance, in a study conducted by Baleghizadeh and Mortazavi (2014) regarding English Foreign Language learners, researchers found that by having students keep journals of their progress, students were able to have records of their accomplishments, which facilitated ASE. By keeping journals of their progress, students

had concrete records of their advancements, which in turn served as proof that they were gaining new skills and improving upon them. Additionally, students were able to reflect on strategies used and the material covered, helping them learn from previous experiences. (Baleghizadeh & Mortazavi, 2014). In another study, McIlroy and colleagues (2017) noted that evaluating prior success inspired students and served as reinforcement for their efforts, encouraging them to remain motivated in their pursuits.

Though performance accomplishments can promote efficacy, PA can also harm one's efficacy via previous failures (Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley et al., 2017; Stagg et al., 2018). Lack of achievement serves as evidence of past failure, negative outcomes, and incompetence, which can lower one's ASE (Baleghizadeh & Mortazavi, 2014). Additionally, Bandura (1977) and Boakye (2015) stated that repeated failure, especially in the nascent phases of a goal or task, proved especially harmful to efficacy. Furthermore, students who find themselves with minimal or no experience completing a task or an assignment are more likely to demonstrate low self-efficacy as students have yet to determine if success regarding the present task is possible (Bartimote-Aufflick et al., 2016). However, studies have shown that occasional failure will not be significantly detrimental to efficacy (Bandura, 1977; Bartimote-Aufflick et al., 2016). In such cases, it seems that prior success helps students develop a stronger and more reliable sense of efficacy that can sustain occasional failure, thereby helping highly efficacious students recover more quickly after experiencing setbacks (Byrne et al., 2014; Edwards-Joseph & Baker, 2014). Furthermore, Bandura (1977) stated that it is not the isolated incident or event that has lasting influence on efficacy, rather it is the sum of experiences that either facilitate or threaten efficacy. In other words, neither sporadic success nor occasional failure will have a significant impact on

efficacy. With extensive experience, one will either begin to establish efficacy or will fail to become efficacious concerning his or her ability to successfully complete a goal or task. Finally, Bandura (1977) mentioned that the amount of effort invested in completing a task can affect efficacy. For example, if a person perceives that plenty of effort has been expended in completing a task, then one will see this as a proof of incompetency which may prove detrimental to one's level of efficacy. For example, one may receive a passing grade on a homework assignment after spending hours to complete it. However, the student may feel that this assignment should not have taken so long to complete. As such, the student concludes that he was slow in completing the assignment not because the material is inherently challenging rather, because he is incompetent or simply not as smart as his peers. This self-assessment will hinder his efficacy.

While numerous studies have documented the influence PA has on ASE, Phan (2014) described how the relationship between achievement and efficacy were bidirectional. That is, previous experience affects ASE, which then affects future achievement. In fact, Baleghizadeh and Mortazavi (2014) went so far as to say that academic self-efficacy can establish a self-fulfilling prophecy. If students doubt their abilities and their potential to learn or acquire new skills, then they will not be motivated to participate in class, ask questions, develop effective study habits, or master course material. As such, students will receive discouraging feedback and poor grades, reinforcing their beliefs that they cannot learn the material. These beliefs will continue to blunt progress, thereby hindering efficacy.

Though PA is usually depicted as being the most reliable, most salient and strongest predictor of ASE, Bartimote-Aufflick and colleagues (2016) noted that the

impact that each source of efficacy has on the establishment and maintenance of efficacy is malleable depending on the context in question and the student in question. For example, researchers noted that for female students studying engineering vicarious learning, or learning by observing others, is the most important source of efficacy (Bartimote-Aufflick et al., 2016). Whereas, Zheng and colleagues (2017) found that verbal persuasion was the most influential source of efficacy for Chinese-speaking English language learners, especially the support received from parents and teachers. Furthermore, researchers stated that VP might be more influential among students from collectivistic cultures compared to students from individualistic cultures (Zheng et al., 2017). Finally, researchers stated that one's ethnicity may influence the importance that each source of efficacy has on self-efficacy (Bartimote-Aufflick et al., 2016). Regardless of how powerful a source of efficacy might be, it is important to remain cognizant of the fact that each source of efficacy contributes to a student's academic self- efficacy and that self-efficacy is a significant predictor of performance, regardless of the student's culture, age or field of study (Stagg et al., 2018).

#### *Verbal Persuasion via Educator Support and ASE*

Verbal persuasion or the encouragement, feedback, and support one receives from others is usually depicted as being the weakest contributor to efficacy as it does not provide concrete proof of ability (Bandura, 1977; Byrne et al., 2014). However, if encouragement is accompanied by help or guidance about how one can improve or gain mastery over a task, then encouragement will be more effective (Bandura, 1977). Ultimately, it is important to remember that verbal persuasion is significant and can stimulate the development of efficacy when present. With that said, studies demonstrated

that students with low ASE are not likely to ask for help when they need assistance (Byrne et al., 2014; Wood et al., 2015). In this manner, VP and ASE can be said to have a complementary relationship. However, faculty and university staff are autonomous persons who can take the initiative to offer assistance to their students and do not have to wait for students to ask for help (Baleghizadeh & Mortazavi, 2014; Bartimote-Aufflick, et al., 2016; Bradley et al., 2017; Byrne et al., 2014; Chee et al., 2018; Jordan & Carden, 2017; Phan, 2014; Raelin et al., 2014; Stagg et al., 2018; White & Perrone-McGovern, 2017; Wood et al., 2015; Zheng et al., 2017). Though it is unreasonable to expect educators to notice every student who is struggling, educators still have much to offer to their struggling students so that they can be encouraged to seek assistance. For example, professors can facilitate ASE by providing genuine praise to students for work well done (Bartimote-Aufflick, et al., 2016; Byrne et al., 2014; Phan, 2014). Another way that educators can help facilitate self-efficacy is simply by offering encouragement or by being supportive to those who are struggling (Stagg et al., 2018; Zheng et al., 2017). With encouraging educators, students will feel motivated to continue their studies and feel reassured that they can master course material. Instructors can further foster ASE by providing opportunities for students to work with peers and by relating course material to real world experiences (Bartimote-Aufflick et al., 2016; Chee et al., 2018). By being allowed to work with peers, students might be able to learn strategies to better help them in class, receive social support from peers and realize that they are not the only ones struggling in class or at university. Additionally, when instructors help students understand previous errors, they protect student efficacy by preventing students from fixating on failure (Byrne et al., 2014; Phan, 2014). Professors would also do well to ensure that they respond to student inquiries in a positive, respectful, and effective

manner, which reinforces help-seeking behavior. For example, if a student has concerns about an exam grade, instructors should make reasonable attempts to discuss these concerns in a constructive and timely manner, while providing additional resources, recommendations or guidance as to how the student can further improve his or her performance (Bartimote-Aufflick, et al., 2016; Bradley et al., 2017; Byrne et al., 2014; Phan, 2014). When instructors provide accurate feedback in a supportive manner, students can reflect on what they did incorrectly, thereby gaining a more realistic understanding of their skill level (Baleghizadeh & Mortazavi, 2014; Byrne et al., 2014; Phan, 2014). Additionally, professors can provide suggestions for how a student can improve. Ultimately, the time that educators invest in student success will contribute to the establishment of positive rapport with their students, which in turn promotes student efficacy. Furthermore, by promoting efficacy, educators can intervene against a student's negative self-beliefs, preventing a negative self-fulfilling prophecy from taking root. Though students lacking ASE are less likely to ask for help, educators know that students are not the only persons who can determine a student's efficacy. Educators too have some influence in that respect. Ultimately, the positive interactions that students have with their instructors will help a student in the development of ASE and contribute to his or her college success (Bartimote-Aufflick, et al., 2016; Bradley et al., 2017; Byrne et al., 2014; Jordan & Carden, 2017; Raelin et al., 2014; Stagg et al., 2018; White & Perronne-McGovern, 2017; Zheng et al., 2017)

Previous research has shown that negatively viewed relationships between students and faculty are associated with lower levels of academic self-efficacy (Jordan & Carden, 2017; Raelin et al., 2014). For example, female students in engineering, math or STEM-related classes have consistently displayed lower levels of ASE compared to male

students (Byrne et al., 2014; Jordan & Carden, 2017). Though there are many possible reasons for the discrepancy in ASE between genders, Jordan and colleagues (2017) cited poorly perceived relationships with faculty as a partial reason for lower levels of ASE, among female engineering students. However, in a study exploring ASE among female and male STEM students at a university with approximately equal representation of both genders among faculty and students, researchers found no significant difference in ASE levels between the two sexes, partially due to the positive rapport students had with their respective professors and advisors (Jordan & Carden, 2017).

#### *Verbal Persuasion via Environmental Social Support and ASE*

Studies have shown that aside from receiving support from one's teachers, students' ASE can also be influenced by the support they perceive to have from family, friends and peers (Budescu & Silverman; Chee et al., 2018; Edwards-Joseph & Baker, 2014; Jordan & Carden, 2017; Raelin et al, 2014; Rigali-Oiler & Kurplus, 2013; Shahed, et al., 2016; Stagg et al., 2018; White & Perone-McGovern, 2017; Wright et al., 2014; Zheng et al, 2017). Additionally, social interactions with peers or classmates can help protect one from feeling marginalized and can facilitate a sense of belonging (Byrne et al, 2014; Chee et al, 2018). Additional research has demonstrated that ASE increases as the amount of perceived social support from family, peers, or faculty increases (Edwards-Joseph & Baker, 2014; Raelin et al., 2014; Shahed et al., 2016). Similarly, research from Boakye (2015) stated that encouragement from others is especially helpful in the establishment of ASE when having difficulty completing assignments. Finally, research by Wright and colleagues (2014) depicted the importance of forming secure attachment with family and peers, stating that forming secure attachments contributes to perceiving fewer barriers and more social support. In other words, secure attachments lead to fewer

perceived barriers, increased perceived social support and higher levels of ASE (Wright et al., 2014). Ultimately, by being able to relate to peers, students are more likely to develop friendships and acquire additional sources of social support, thereby increasing ASE (Jordan & Carden, 2017).

Finally, environmental support and ASE seem to have a complementary relationship. Though environmental support can affect ASE, so too can ASE affect environmental support (Byrne et al, 2014). That is, students with low levels of ASE may experience discomfort, anxiety or a lack of confidence interacting or working with peers. This hinders their performance when working in groups by decreasing the likelihood that they will seek assistance from peers or family members (Byrne et al., 2014). Without feeling comfortable asking others for help, neither efficacy nor performance can benefit from environmental support. Furthermore, both efficacy and performance are threatened by a perceived inability to be able to call upon others for assistance. However, in the same sense that educators are autonomous individuals, family and friends are also autonomous persons who can offer their assistance regardless if called upon. Therefore, the relationship between support and efficacy does not need to be cyclical, as either party can take steps necessary to protect or promote academic self-efficacy

Though previous research endorses a relationship between verbal support and efficacy, research also noted the limits that verbal persuasion has on efficacy. For example, Bandura (1977) stated that VP needs to be accompanied by assistance. Otherwise, one runs the risk of experiencing repeating failure, thereby discrediting the supportive person. Additionally, if one has plenty of experience failing at a task, then encouragement is less likely to seem credible or effective (Bandura, 1977).

Additional limits to VP may concern life circumstances or one's age. For example, Budescu and Silverman (2016) noted that the role of support from family is most salient among freshmen and senior students but not among sophomores or juniors. One possible explanation offered by researchers is that support from family is needed most during times of transition. Thus, freshmen and senior students are more reliant on support from family as opposed to sophomore and junior students (Budescu & Silverman, 2016). Furthermore, freshman students are new to campus and have yet to form a social network. Senior students are also probably lacking a social network; many of their friends have potentially graduated, transferred, or withdrawn from school (Budescu & Silverman, 2016). In sum, students reporting social support are more likely to demonstrate increased ASE; however, students with low ASE are less likely to seek support from others, hindering progress in both their respective levels of ASE and their academic performance.

#### *Vicarious Learning Experiences and ASE*

Finally, students' academic self-efficacy is influenced by observing others perform or attempt a task, especially when the person being observed is similar to the observer or when the observer can identify with the potential role-model (Baleghizadeh & Mortazavi, 2014; Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley et al., 2017; Byrne et al., 2014; Edwards-Joseph & Baker, 2014; Jordan & Carden, 2017; Phan, 2014; Stagg et al., 2018; Stewart & Alrutz, 2014). Research revealed that students can learn by witnessing their peers perform tasks similar to what they are attempting (Byrne et al., 2014). They learn how to accomplish an assignment or even learn from their peers'

mistakes in such a way as to learn what not to do (Razek & Coyner, 2014). In fact, Bartimote-Aufflick and colleagues (2016) noted that observing peers make mistakes offered the fallible person an opportunity to model effective coping strategies to deal with failure, learn from their mistakes and correct the errors made. This allows students not only the opportunity to learn from others' mistakes but also to learn effective methods to cope with failure so that their personal efficacy will more easily recover after they experience their personal setbacks (Bartimote-Aufflick et al., 2016). Furthermore, Boakye (2015) noted that vicarious learning is especially important for students' ASE when performing novel tasks.

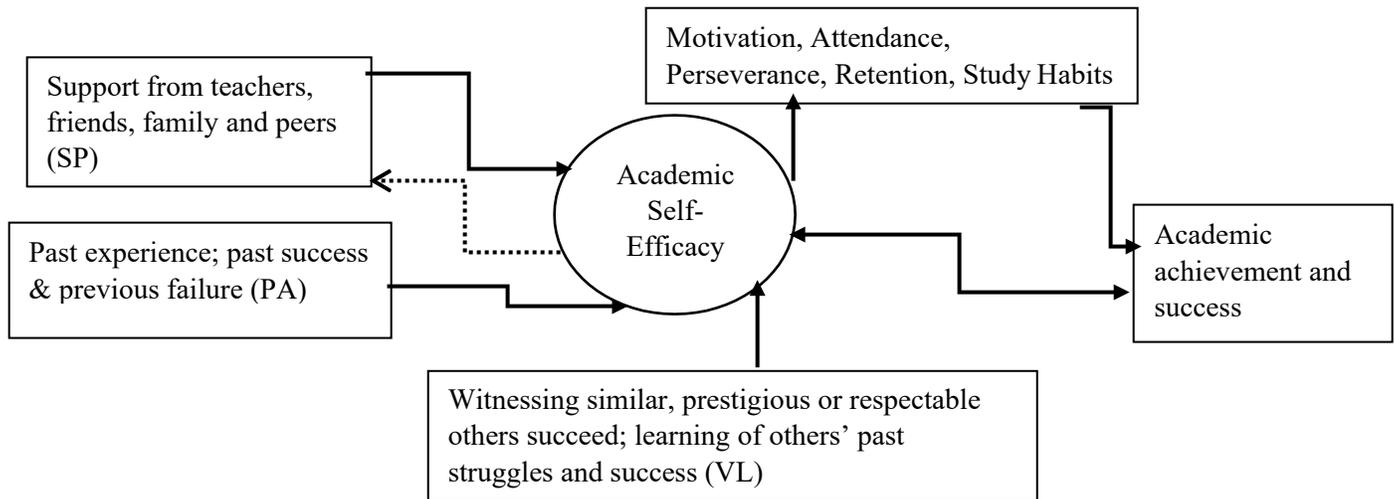
Family members, such as parents and siblings, are also qualified to serve as a student's model helping them learn from their previous or current experiences (Edwards-Joseph & Baker, 2014; Jordan & Carden, 2017; White & Perrone-McGovern, 2017). In a study conducted by Edwards-Joseph and Baker (2014), researchers found that international Caribbean students credited their efficacy to witnessing peers succeed in school or by knowing that their parents or other family members had succeeded at university. Having knowledge of their family's success in school helped students form positive self-beliefs about their personal potential to achieve academic success.

Vicarious Learning, whether from family, peers, or faculty, has also been demonstrated as being especially significant to female students studying STEM courses (Bartimote-Aufflick et al., 2016; Jordan & Carden, 2017). In a study exploring ASE among female STEM students, researchers found that ASE for female students was not significantly lower than the ASE of their male peers, which is common among female students in STEM fields (Jordan & Carden, 2017). One possible reason was due to the

equal representation between females and males, both at the student level and at the faculty level (Jordan & Carden, 2017). By having female role-models as resources for support, female students could learn from them and were possibly more encouraged to seek help as needed (Jordan & Carden, 2017). Researchers also stated that having positive role-models among faculty and family helped facilitate ASE, as many of the female students had parents who were both active in STEM-related fields (Jordan & Carden, 2017; Stagg et al., 2018). Consequently, witnessing their mothers succeed in a male-dominated field, while possibly enduring similar challenges that the students were experiencing, served as concrete evidence that they too, could succeed in STEM fields (Jordan & Carden, 2017). Furthermore, having role-models with whom students feel that they can relate to may harbor a sense of belonging thereby, increasing their level of ASE. Finally, increased female representation in STEM classes may decrease stereotype threat and increase social support, opportunities for peer modeling, modeling at the faculty level, feelings of belonging and overall levels of ASE (Jordan & Carden, 2017). Since both genders were equally represented in the previously mentioned study among students and faculty, male and female students alike should be able to benefit from similar support networks, vicarious learning, and feelings of belonging, thereby fostering ASE (Jordan & Carden, 2017). Figure 2 illustrates the way environmental factors and personal experiences affect one's level of efficacy and how efficacy can influence the amount of social support one receives.

**Figure 2**

*Sources of Academic Self-Efficacy*



*Note.* The sources of efficacy and the impact efficacy has on achievement, as well as the influence efficacy has on the amount of social support sought and received.

*Summary*

In sum, academic self-efficacy is significantly associated with academic performance and college success. However, some research has stated that the sources of efficacy are less significant to the establishment and maintenance of efficacy among college students as they are for K-12 students (Byars-Winston et al., 2017). Additionally, Stewart and Alrutz (2014) argued that how one demonstrates their efficacy might be influenced by their gender orientation, which may also influence how an educator interprets a student's sense of efficacy. For example, researchers have argued that a feminine gender orientation is more aligned with giving credit to environmental factors for personal success (Stewart & Alrutz, 2014). Additionally, a feminine gender orientation might be better associated with modesty as opposed to transparently and conspicuously demonstrating confidence in one's abilities (Stewart & Alrutz, 2014). Some may view modesty as evidence that a student lacks efficacy (Stewart & Alrutz,

2014). With that said, a plethora of research has demonstrated the significance of ASE to academic performance among males and females, of different racial, ethnic, and cultural backgrounds throughout the United States and abroad (Bartimote-Aufflick et al., 2016). Additionally, research has demonstrated the importance of ASE to academic performance among students of various ages (Barimote-Aufflick et al., 2016). Ultimately, research has demonstrated the significance of ASE and how others can influence said efficacy, thereby influencing a student's probability of academic success.

Though there is variance in how one establishes, maintains, and protects one's academic self-efficacy, the overarching antecedent or predictor of academic success is academic self-efficacy (Chee et al., 2019). As such, it is imperative to learn more about the sources of efficacy so that educators can be better equipped to assist their students advance in school. The objective of this study was to provide information regarding potential protective factors that may facilitate ASE in order to help students in their academic pursuits. The factors explored in this study were performance accomplishments, educator support, perceived social support from family and friends and vicarious learning via academic role-models.

## **HYPOTHESES**

### *Hypothesis 1:*

H<sub>1</sub>: Students recalling a previous positive academic experience will show significantly higher academic self-efficacy than those recalling a negative academic experience

H<sub>0</sub>: Students recalling a previous positive academic experience will not show significantly different academic self-efficacy than those recalling a negative

academic experience.

*Hypothesis 2:*

H<sub>1</sub>: Academic self-efficacy is correlated with the amount of perceived support from educators

H<sub>0</sub>: Academic self-efficacy is not correlated with the amount of perceived support from educators.

*Hypothesis 3:*

H<sub>1</sub>: Academic self-efficacy is correlated with the amount of perceived social support from family and friends.

H<sub>0</sub>: Academic self-efficacy is not correlated with the amount of perceived social support from family and friends.

*Hypothesis 4:*

H<sub>1</sub>: Academic self-efficacy is correlated with the number of academic role-models students report to have available to them.

H<sub>0</sub>: Academic self-efficacy is not correlated with the number of academic role-models students report to have available to them.

## **METHODOLOGY**

### *Sampling and Participant Collection*

The sample ( $N=172$ ) consisted of male and female undergraduate students from a small university. Participants were recruited from their psychology classes and were informed that participation was voluntary; that they could withdraw at any point; and that they would not be compensated for participation. Furthermore, participants were asked to

provide basic demographic information, including information about their age, gender, race/ethnicity, grade point average (GPA) and academic classification. Additionally, students were asked whether they are related to someone who has attended an institution of higher education. Furthermore, to measure locus of control, students were asked to indicate the degree to which they feel that they were in control of their lives. Finally, students completed surveys online via SurveyMonkey.

### *Procedure*

Students were recruited from their classes and received information about the study and their rights as participants. Informed consent was provided to students with the contact information of the faculty supervisor. Upon giving informed consent, students were randomly assigned to 1 of 2 groups each consisting of a scenario in which respondents were prompted to recall an event when they worked diligently to complete an assignment. One group (Success Condition) had the students remember successfully completing their objective, while the other group (Failure Condition) concluded by having the respondents recall that said event ended unsuccessfully. Upon reading the prompt, respondents were then directed to surveys which were administered in random order. All participants concluded this study by disclosing basic demographic information.

Students completed a modified version of the Instructor/Student Interactions subscale of the Students' Evaluation of Teaching Effectiveness Rating Scale (SETERS) to measure perceived teacher support (Toland & De Ayala, 2005). Additionally, students completed the Family and Friend Support for attending College subscale of the Perceived Environmental Support Scales to measure the amount of social support students perceived to have available to them (Garriott & Nisle, 2018). Finally, students completed

the self-efficacy subscale of the Academic Motivation Survey (AMS) to measure students' academic self-efficacy (Wu & Fan, 2017).

### *Measures*

Directionality between ASE and academic achievement was determined by having students read a paragraph asking them to remember an occasion in which they worked on an academic assignment. The paragraph concluded either by having the student recall having successfully completed the assignment or by having the student recall failing the assignment. If performance accomplishments do affect efficacy, then there would be a difference in the level of efficacy reported between the two conditions. Students were randomly assigned to one of these two groups. It should be noted that writing prompts are not instruments, so they cannot have reliability and validity.

The study measured students' perceived support from their respective instructors by utilizing a modified version of the Instructor/Student Interactions subscale of the SETERS, developed by Toland and De Ayala (2005). The modified version of the Instructor/Student Interactions subscale included a 10 item, 6-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree), with 0 included for items that do not apply to the respondent. Reliability for subscales was measured at Cronbach's alpha coefficients ranging from .82 to .92 (Toland & De Ayala, 2005). Convergent validity was measured by comparing SETERS factors to factors on the Students' Evaluation of Educational Quality questionnaire. Results indicate a strong positive relationship between the two measures (Toland & De Ayala, 2005). The normative sample for this scale consisted of male and female undergraduate college students aged 17 to 62 (Toland & De Ayala, 2005).

Perceived support from family and friends was measured by utilizing the Family and Friend Support for attending College subscale of the Perceived Environmental Support Scales (Garriott & Nisle, 2018). This scale assesses students' social sources of support for coping with college stressors. This scale consisted of 4 items, utilizing a 5-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating higher levels of perceived support. The normative sample for this scale consisted of male and female undergraduate college students, aged 18 to 29. The internal consistency coefficient for the family/friend support subscale (Coefficient alpha) was .81 (Garriott & Nisle, 2018).

Academic self-efficacy was measured by utilizing the self-efficacy subscale of the Academic Motivation Survey. The normative sample for this scale consisted of undergraduate male and female college students, aged 18 to 29. The internal reliability coefficient for the self-efficacy subscale (Cronbach's alpha) was .84. The 7-item self-efficacy subscale uses a 5-point Likert scale format, ranging from 1, representing *strongly disagree* to 5, representing *strongly agree* (Wu & Fan, 2017).

Academic achievement was measured by asking respondents to disclose their current cumulative GPA. Additionally, to gauge the influence that exposure to academic role-models has on efficacy, students were asked to indicate the number of family members who attended an institution of higher education. Additionally, students were asked to indicate their current academic classification by disclosing if they were a freshman, a sophomore, a junior or a senior. Finally, students are asked to indicate the degree to which they feel that they were in control of their lives to measure their locus of control.

## *Statistics*

An independent samples t-test was used to compare the level of ASE between the two condition groups. Separate Pearson's correlation coefficients were used to analyze the respective relationships between (a) academic self-efficacy and experience, (b) academic self-efficacy and support received from educators, (c) academic self-efficacy and the social support respondents receive from family and friends and (d) academic self-efficacy and the number of academic role-models students have available to them. Furthermore, separate Pearson's correlation coefficients were utilized in post-hoc analyses to observe the relationships between (a) locus of control (LOC) and ASE and (b) academic achievement, as measured by grade point average and ASE. Finally, a post-hoc regression analysis and subsequent ANOVA were utilized to measure how strongly LOC, VL, PA, instructor support and social support predict ASE.

## **Results**

The present study examined the factors that influence academic self-efficacy among undergraduate students. The factors examined were performance accomplishments, professor support and social support from family and friends. Additionally, this study examined the relationship between vicarious learning and academic self-efficacy. Vicarious learning was quantified by having respondents disclose the number of family members that had attended an institution of higher education. 75% of participants were female (see Table 1). Additionally, 44% reported identifying as Hispanic or Latino/a, followed by 22% identifying as Black or African American and 20% reported identifying as White or Caucasian (see Table 2). The remaining participants identified as being Asian or Asian American (11%), one percent Native American or American Indian. Finally, two percent selected "Other" as their ethnic

background. Furthermore, almost 75% of the participants were freshman, followed by sophomores, who comprised roughly 20% of the sample size. Fewer than 10% of respondents were upperclassmen (see Table 3). Lastly, over three-quarters of the sample size consisted of students between eighteen (48.3%) and nineteen (32%) years of age (see Table 4).

### *Hypothesis One*

The first hypothesis predicted that students who recalled a previous positive academic experience would demonstrate significantly higher levels of self-efficacy compared to students recalling a previous negative academic experience. An independent samples t-test was used to determine the difference between these two groups.

Participants in the success condition reported slightly higher levels of efficacy, however the difference in amount of efficacy reported was not statistically significant,  $t(170) = .43, p = .67$  (See Table 5). Therefore, the hypothesis predicating higher efficacy for people recalling a positive academic experience was not supported (See Table 6)

### *Hypothesis Two*

The second hypothesis predicted that academic self-efficacy would be correlated with the amount of perceived support from educators. One respondent did not fully complete the Students' Evaluation of Teaching Effectiveness Rating Scale; thus, for the purpose of this analysis the sample size was 171. Pearson's  $r$  was utilized to explore the relationship between perceived instructor support and level of efficacy. There was a statistically significant positive correlation between the two variables,  $r(169) = .30, p < .01$ . This indicated that as instructor support increased, academic self-efficacy also increased for this sample. Therefore, the research hypothesis was supported (see Table 7).

### *Hypothesis Three*

The third hypothesis predicted that academic self-efficacy would be correlated with the amount of perceived social support from family and friends. Pearson's  $r$  was utilized to measure the relationship between efficacy and social support ( $N=172$ ). The results indicated a statistically significant positive relationship between academic self-efficacy and social support,  $r(170) = .37, p < .01$ . That is, as the amount of social support increased, self-efficacy also increased. The research hypothesis was supported (see Table 8).

### *Hypothesis Four*

The fourth hypothesis predicted that academic self-efficacy would be correlated with the number of academic role-models students reported to have available to them ( $N=172$ ). This hypothesis was not supported by the data,  $r(170) = -.06, p = .48$ . The results indicated no statistically significant relationship between VL and ASE. As such, the null hypothesis that there is no significant relationship between academic self-efficacy and academic role-models was sustained (see Table 9).

### *Post-hoc Analysis One*

Several post-hoc analyses were conducted to further examine academic self-efficacy. The first post-hoc analysis examined the relationship between efficacy and locus of control. The results yielded a statistically significant positive correlation between locus of control and efficacy. As respondents reported the perception of having control over their respective lives, they also reported having increased levels of efficacy,  $r(170) = .35, p < .01$  (see Table 10)

### *Post-hoc Analysis Two*

The second post-hoc analysis conducted explored the relationship between cumulative grade point average and academic self-efficacy. As previously mentioned, approximately three quarters of the respondents were freshman students, thus they may not have had an opportunity to establish a cumulative GPA. In fact, 80 respondents did not disclose or report a grade point average. 92 of the 172 total respondents reported their GPA,  $r(90) = .01, p = .96$ . The results indicated that there was not a statistically significant relationship between GPA and ASE (see Table 11).

### *Post-hoc Analysis Three*

The final post-hoc analysis utilized a regression analysis (see Table 12) and ANOVA (see Table 13) to examine the predictive powers of instructor support, social support, VL, PA and LOC, with respect to efficacy. The results fail to yield significant predictability for VL with respect to efficacy. The number of family members who have attended college/university did not predict a student's level of efficacy. Similarly, PA did not demonstrate statistically significant predictability, indicating that isolated experiences do not predict present level of efficacy. Finally, instructor support, social support and LOC all yielded significant predictability values (see Table 14).

## **Discussion**

Research on this topic can be beneficial to both university students and educators as they devise new methods to aid student progress through their academic experience. In the present study, the author studied academic self-efficacy and the sources that have potential to either augment or hinder student efficacy. For the purposes of this study, ASE was defined as the belief that one has in his or her ability to successfully perform or complete academic tasks. The present study has mixed results, supporting some of the

previous research on the sources of efficacy (i.e., verbal persuasion) but not supporting research concerning other sources of efficacy (i.e., performance accomplishments and vicarious learning). There are several possible explanations for the discrepancy in results, the most salient being the small sample size that might not be representative of the population.

### *Performance Accomplishments and Academic Self-Efficacy*

Previous research has examined the relationship between past experience, or performance accomplishments, and efficacy, establishing a positive relationship between the two (Baleghizadeh & Mortazavi, 2014; Bandura, 1977; Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley et al., 2017; Byars-Winston et al., 2017; Byrne et al., 2014; Edwards-Joseph & Baker, 2014; McIlroy et al., 2017; Stagg et al., 2018; Stewart & Alrutz, 2014). Though there is a strong relationship between PA and ASE, research has also demonstrated a more complex relationship between the two variables. The present study supports research indicating that isolated incidences of failure do not dramatically or permanently harm efficacy (Bandura, 1977; Baleghizadeh & Mortazavi, 2014; Byrne et al., 2014; Edwards-Joseph & Baker, 2014). In this study, students recalling previous failure did not report a significantly reduced level of efficacy compared to students in the condition recalling success. One possible explanation for the results might be that students were asked to recall a previous experience. It is possible that students recalling failure may have also recalled resilience, recovery, or redemption. In other words, by recalling an experience that has already terminated, students might be cognizant of the fact that their experience was a temporary one. Ultimately, it might be that efficacy is greater influenced by present experiences or by events that have been recently

experienced. In other words, if a person is currently struggling in class or if a student has received an unsatisfactory grade on a recent assignment, these experiences may threaten his or her efficacy. However, if a student struggled in a class during the previous term, then efficacy might not be currently threatened as a result of the experiences of the previous term. Similarly, if a student is struggling in one class, he or she may experience a diminished level of efficacy in that class but not in all of his or her classes. As Bandura mentions (1977), one experience does not have a lasting impact on efficacy, rather the impact on efficacy stems from the results of multiple experiences. Therefore, simply recalling a failed experience is not enough to threaten efficacy if the respondent has had success since the time of the recalled experience. Finally, the lack of fluctuation between condition groups indicates that efficacy is a trait. Efficacy was not significantly reduced for the respondents in the condition recalling failure, thereby demonstrating stability. In other words, the level of efficacy one has will remain relatively consistent and will not significantly change from one experience to the next.

#### *Educator Support and Academic Self-Efficacy*

Past research has indicated a significant relationship between educator support and ASE (Baleghizadeh & Mortazavi, 2014; Bartimote-Aufflick, et al., 2016; Bradley et al., 2017; Byrne et al., 2014; Chee et al., 2018; Jordan & Carden, 2017; Phan, 2014; Raelin et al., 2014; Stagg et al., 2018; White & Perrone-McGovern, 2017; Wood et al., 2015; Zheng et al., 2017). This study also found a significant relationship between educator support and ASE. It might be that faculty are perceived as credible figures of authority, especially in their field. As such, the encouragement, assistance, guidance, and support received from them is valued by students. When educators encourage their students, this encouragement might be perceived as an authentic and objective

assessment, given by a credible source. Ultimately, it is easier to believe the positive remarks said by another if that person is a credible source.

### *Social Support and Academic Self-Efficacy*

Past research has demonstrated the significant relationship between social support and ASE (Boakye, 2015; Budescu & Silverman; Byrne et al, 2014; Chee et al., 2018; Edwards-Joseph & Baker, 2014; Jordan & Carden, 2017; Raelin et al, 2014; Rigali-Oiler & Kurplus, 2013; Shahed, et al., 2016; Stagg et al., 2018; White & Perone-McGovern, 2017; Wright et al., 2014; Zheng et al, 2017). Similar to previous research, the results of the present study indicate a significant relationship between ASE and social support from family and friends. As students pursue their academic goals, they will inevitably encounter strife, which may prove discouraging. In challenging times, there is opportunity to receive encouragement and persuasion from others indicating that conflict encountered can be conflict resolved. This is reassuring and ultimately aids in the establishment and protection of one's efficacy. Additionally, friends and family are also credible sources. They may lack credibility in terms of the material one is studying, but they have knowledge about the student. Therefore, encouragement about the student is depicted as an informed assessment about the skills of someone intimately known.

### *Vicarious Learning and Academic Self-Efficacy*

Past research has examined the relationship between vicarious learning and academic self-efficacy, establishing a significant positive relationship between the two (Baleghizadeh & Mortazavi, 2014; Bartimote-Aufflick et al., 2016; Boakye, 2015; Bradley et al., 2017; Byrne et al., 2014; Edwards-Joseph & Baker, 2014; Jordan & Carden, 2017; Phan, 2014; Stagg et al., 2018; Stewart & Alrutz, 2014). However, the

present study examined this relationship but found no statistically significant correlation between the two variables. It might be that respondents do not have extensive knowledge concerning the experience that family members may have had in school. One cannot learn from an experience that he or she is not privy to. It may also be that the term *family* was not operationally defined; therefore, respondents may have included family members with whom they have minimal contact. Consequently, respondents included family members who have attended school but did not possess details of their family's experiences at school. Without detailed information about another's experiences, one cannot be said to have learned from said experiences. Ultimately, the hypothesis predicting a significant relationship between ASE and the number of academic role-models available to a student was not supported by the results of this study.

#### *Locus of Control and Academic Self-Efficacy*

The results of a post hoc analysis demonstrated a significant, positive relationship between LOC and ASE. It might be that feeling in control of one's life increases the amount of efficacy one has. Alternatively, one may gain the perception of control because of one's increased level of efficacy. It should be noted that Bandura cautioned between establishing a relationship between efficacy and locus of control. Bandura stated that one may give up, not because he or she lacks efficacy, but rather because he or she is convinced that their actions are of no consequence (Bandura, 1977). For example, a student may give up trying to do well in class because he or she is convinced that unfairness at school or social injustices in the community will blunt his or her future success.

### *Grade Point Average and Academic Self-Efficacy*

Though previous research has established a significant relationship between GPA and ASE, this study's results did not support the previously mentioned relationship (Bartimote-Aufflick et al., 2016; Mendez & Bauman, 2018; McIlroy et al., 2017; Raelin et al., 2014). The most likely reason for this might be that approximately half of the respondents did not report their GPA. Had more respondents disclosed their GPA, it is likely that a significant relationship would have been demonstrated between GPA and ASE, similar to research of the past.

### *Predictors of ASE*

A regression analysis was conducted to measure how strongly the independent variables predicted ASE. Locus of control, support from educators, and social support from family and friends were predictors of efficacy. However, the results indicated that having family members with college or university experience was not a predictor of efficacy. Similarly, one's prior failures did not predict efficacy. This indicates that environmental factors contribute significantly to academic self-efficacy. Finally, the perception of being in control of one's life is also a predictor of ASE.

### *Implications*

This study demonstrated that social support from family, friends, and faculty, is significant to ASE. One's environment can help establish, protect, and maintain a student's level of ASE. Furthermore, the effect that PA have on ASE is null or, at the very least, temporary, and not pervasive. As students pursue their academic goals, they will have numerous opportunities to establish their efficacy and others within their environment will have just as much opportunity to help them. More importantly, family

members can help their student's efficacy, even if the family members themselves do not have personal experience in college or university. Ultimately, there will be many occasions in which students find their efficacy challenged and will feel discouraged or find that they are lacking in efficacy. However, friends, family and teachers can all play a role in helping students recover their efficacy so that they may continue their academic pursuits. Furthermore, it is essential to remain cognizant of the fact that history is not destiny. Simply because one struggles to grasp course material today does not mean that this struggle is permanent. There are several strategies that a student can attempt in order to improve, including consulting with family, friends or faculty for extra help or guidance. Additionally, friends, family and faculty can reach out of their own accord to the struggling student and help protect a student's efficacy so that the student will continue to work at gaining the knowledge and skills necessary to master course material. Finally, while this study did not show a significant relationship between ASE and GPA, one should remain cognizant of the many relationships ASE has with motivation, endurance, and future success. Therefore, it is essential to continue to gain insight into efficacy and how to best facilitate efficacy in others.

### *Limitations*

There are several limitations to the present study. First, the sample for the present study is a small convenience sample comprised of undergraduate students of a small private university; therefore, this sample might not be representative of the national university student population. Additionally, the sample size was not equally represented in terms of demographic variables, such as gender and academic classification. Secondly, there could have been self-reporting bias in terms of reporting one's level of efficacy.

Third, this study was administered at the latter portion of a semester. It is possible that the students that remained in the class at this point were highly efficacious students while lower efficacious students may have withdrawn from the class. Finally, two clerical errors were present in this study. The first is an unintentional omission of an item in the SETERS survey. The second error presented the name of the subscale of the Perceived Environmental Support Scales as an item, which allowed subjects to respond. However, it is unlikely that either error had a significant impact on the results. Despite the limitations to this study, the results and implications are nonetheless significant.

#### *Future Research*

Future research should take the previously outlined limitations into consideration. First, a larger sample size consisting of approximately equal numbers of respondents with respect to academic classification and gender should be present in future research. Doing this would help detect differences concerning the utilization of the sources of efficacy between male and female students as well as underclassmen and upperclassmen. Furthermore, future research should ask subjects to report their grade in class, as opposed to cumulative GPA, helping ensure a larger response. Additionally, a longitudinal study should be considered to increase the probability of receiving responses from students currently struggling in class, thereby making success and failure conditions more salient. Finally, future research should explore the relationship between locus of control and efficacy in greater depth, so as to evaluate the significance thereof.

#### *Conclusion*

In conclusion, the results of this study found that the influence that performance accomplishments have on efficacy is temporary and not pervasive. Furthermore,

environmental support contributes to academic self-efficacy. Thus, it is possible that the persons in one's environment can intervene when they notice that a student's efficacy is being threatened. Through intervention, environmental supports can help a student recover from his or her setbacks, thereby increasing a student's commitment to their goals and decreasing the likelihood that the student will surrender due to frustration, fear of failure, feelings of inadequacy or threatened efficacy. Additionally, the lack of a significant relationship between VL and ASE indicates that it is not necessary for family members to have personal experience with college for them to promote and protect the efficacy of another. As such, any person can help increase student efficacy and, by extension, student success. Finally, the lack of a relationship between PA and ASE suggests that established self-efficacy is a trait that does not significantly fluctuate over time. In other words, one's level of efficacy will not increase with age or through time nor will efficacy diminish over the years. Without environmental intervention, one's efficacy will remain unchanged.

## REFERENCES

- Baleghizadeh, S., & Mortazavi, M. (2014). The impact of different types of journaling techniques on EFL learners' self-efficacy / El impacto de diferentes tipos de diario en la autosuficiencia de estudiantes de inglés como lengua extranjera. *Profile Issues in Teachers' Professional Development*, 16(1), 77-88.  
10.15446/profile.v16n1.37184
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. <http://dx.doi.org/10.1037/0033-295X.84.2.191>
- Bartimote-Aufflick, K., Bridgeman, A., Walker, R., Sharma, M. & Smith, L. (2016). The study, evaluation, and improvement of university student self-efficacy. *Studies in Higher Education*, 41(11), 1918-1942.  
<http://dx.doi.org/10.1080/03075079.2014.999319>
- Boakye, N.A.N.Y. (2015). The relationship between self-efficacy and reading proficiency of first-year students: An exploratory study. *Reading & Writing: Journal of the Reading Association of South Africa*, 6(1), 1-9.
- Bradley, R. L., Browne, B. L. & Kelley, H. M. (2017). Examining the influence of self-efficacy and self-regulation in online learning. *College Student Journal*, 51(4), 518-531.
- Budescu, M. & Silverman, L. R. (2016). Kinship support and academic efficacy among college students: A cross-sectional examination. *Journal of Child & Family Studies*, 25(6), 1789-1801. <http://10.1007/s10826-016-0359-z>

Bureau of Labor Statistics (2019). *The Employment Situation – 2019*. Retrieved from <https://www.bls.gov/news.release/pdf/empsit.pdf>

Byars-Winston, A., Diestelmann, J., Savoy, J. N., & Hoyt, W. T. (2017). Unique effects and moderators of effects of sources on self-efficacy: A model-based meta-analysis. *Journal of Counseling Psychology*, 64(6), 645-658.

Byrne, M., Flood, B. & Griffin, J. (2014). Measuring the academic self-efficacy of first-year accounting students. *Accounting Education*, 23(5), 407-423.  
<Http://dx.doi.org/10.1080/09639284.2014.931240>

Chee, C. L., Shorty, G. & Robinson Kurpius, S. E. (2019). Academic stress of Native American undergraduates: The role of ethnic identity, cultural congruity, and self-beliefs. *Journal of Diversity in Higher Education*, 12(1), 65-73.  
<https://doi.org/10.1037/dhe0000094>

Chemers, M. M., Hu, L-T, & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55-64.

Edwards-Joseph, A. & Baker, S. (2014). Factors Caribbean overseas students perceive influence their academic self-efficacy. *Journal of International Students*, 4(1), 48-59.

Garriott, P. O. & Nisle, S. (2018). Perceived Environmental Support Scales. PsycTESTS.  
<http://dx.doi.org/10.1037/t70442-000>

- Jordan, K. & Carden, R. (2017). Self-efficacy and gender in STEM majors. *Modern Psychological Studies*, 22(2), 60-64.
- McIlroy, D., Palmer-Conn, S., Lawler, B., Poole, K., & Ursavas, O. F. (2017). Secondary level achievement: Non-intellective factors implicated in the process and product of performance. *Journal of Individual Differences*, 38(2), 102-112.  
<http://dx.doi.org/10.1027/1614-0001/a000227>
- Mendez, J.J., & Bauman, S. (2018). From migrant farmworkers to first generation Latina/o students: Factors predicting college outcomes for students participating in the College Assistant Migrant Program. *The Review of Higher Education*, 42(1), 173-208.
- Pajares, F. & Miller, M. D. (1994). Role of self-efficacy and self-concept beliefs in mathematical problem solving: A path analysis. *Journal of Educational Psychology*, 86(2), 193-203. <http://dx.doi.org/10.1037/0022-0663.86.2.193>
- Phan, H. (2014). Self-efficacy, reflection, and achievement. A short-term longitudinal examination. *Journal of Educational Research*, 107(2), 90-102.  
<http://dx.doi.org/10.1080/00220671.2012.753860>
- Raelin, J. A., Bailey, M. B., Hamann, J., Pendleton, L. K., Reisberg, R. & Whitman, D. L. (2014). The gendered effect of cooperative education, contextual support, and self-efficacy on undergraduate retention. *Journal of Engineering Education*, 103(4), 599-624. <http://10.1002/jec.20060>
- Razek, N. A., & Coyner, S.C. (2014). Impact of self-efficacy on Saudi students' college performance. *Academy of Educational Leadership Journal*, 18(4), 85-96.

- Rigali-Oiler, M. & Kurpius, S. R. (2013). Promoting academic persistence among racial/ethnic minority and European American freshman and sophomore undergraduates: Implications for college counselors. *Journal of College Counseling*, 16(3), 198- 212. <http://10.1002/j.2161-1882.2013.00037.x>
- Shahed, S., Hashmi, M. R. & Hashmi, A. M. (2016). Academic performance, self efficacy and perceived social support of visually impaired students. *Annals of King Edward Medical University*, 22(1), 72-77. 10.21649/akemu.v22i1.1068
- Stagg, S.D., Eaton, E & Sjoblom, A. M. (2018). Self-efficacy in undergraduate students with dyslexia: a mixed methods investigation. *British Journal of Special Education*, 45(1), 26-42. <http://10.1111/1467-8578.12200>
- Stewart, T., & Alrutz, M. A. (2014). Gender and service-learning: Effects on the perceived general self-efficacy of honors undergraduates. *College Student Affairs Journal*, 32(1), 189-203.
- Toland, M. D. & De Ayala, R. J. (2005). Students' Evaluation of Teaching Effectiveness Rating Scale (SETERS). PsycTESTS. <http://dx.doi.org/10.1037/t05309-000>
- Wood, J. L., Newman, C. B., & Harris F. III. (2015). Self-efficacy as a determinant of academic integration: an examination of first-year Black males in the community college. *The Western Journal of Black Studies*, 39(1), 3-17.
- White, A. V. & Perrone-McGovern, K. (2017). Influence of generational status and financial stress on academic and career self-efficacy. *Journal of Employment Counseling*, 54(1), 38-46. <http://10.1002/joec.12049>

Wright, S. L., Perone-McGovern, K. M., Boo, J. N. & White, A. V. (2014). Influential factors in academic and career self-efficacy: Attachment, supports, and career barriers. *Journal of Counseling & Development*, 92(1), 36-46.

<http://10.1002/j.1556-6676.2014.00128.x>

Wu, F. & Fan, W. (2017). Academic Motivation Survey. PsycTESTS.

<http://dx.doi.org/10.1037/t64676-000>

Zheng, C., Liang, J-C. & Tsai, C-C (2017). Validating an instrument for EFL learners' sources of self-efficacy, academic self-efficacy and the relation to English proficiency. *Asia-Pacific Education Researcher*, 26(6), 329-340.

<http://dx.doi.org/10.1007/s40299-017-0352-3>

## Tables

Table 1

*Participant Gender*

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	43	25.0	25.0	25.0
Female	129	75.0	75.0	100.0
Total	172	100.0	100.0	

Table 2

*Participant Race and Ethnicity*

Race/Ethnicity	Frequency	Percent	Valid Percent	Cumulative Percent
White or Caucasian	35	20.0	20.0	20.0
Asian or Asian American	19	11.0	11.0	31.0
Hispanic or Latino	76	44.0	44.0	76.0
Black or African American	37	22.0	22.0	97.0
Native American or American Indian	2	1.0	1.0	98.0
Other	3	2.0	2.0	100.0
Total	172	100.0	100.0	

*Note.* Percent values are rounded to the nearest percent.

Table 3

*Participant Academic Classification*

	Class	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Freshman	128	74.4	74.4	74.4
	Sophomore	31	18.0	18.0	92.4
	Junior	11	6.4	6.4	98.8
	Senior	2	1.2	1.2	100.0
	Total	172	100.0	100.0	

Table 4

*Participant Age*

	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	83	48.3	48.3	48.3
	19	55	32.0	32.0	80.2
	20	18	10.5	10.5	90.7
	21	7	4.1	4.1	94.8
	22	3	1.7	1.7	96.5
	24	2	1.2	1.2	97.7
	26	1	.6	.6	98.8
	28	1	.6	.6	98.8

30	1	.6	.6	98.4
37	1	.6	.6	100.0
Total	172	100.0	100.0	

Table 5

*Academic Self-Efficacy (ASE) Group Statistics*

	Participant's random condition	N	Mean	Std. Deviation	Std. Error Mean
ASE	Success	85	25.8941	4.62916	.50210
	Failure	87	25.5862	4.86457	.52154

Table 6

*Independent Samples T- Test for Group Means*

Levene's Test for Equality of Variances		t-test for Equality of Means						
F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper

Self-Efficacy	Equal variances assumed	.000	.999	.425	170	.671	.30791	.72437	-1.12201	1.73783
	Equal variances not assumed			.425	169.883	.671	.30791	.72395	-1.12119	1.73701

Table 7

*Instructor Support (VP) and Self-efficacy*

		Instructor Support	Self-Efficacy
Instructor Support	Pearson Correlation	1	.302**
	Sig. (2-tailed)		.000
	N	171	171
Self-Efficacy	Pearson Correlation	.302**	1
	Sig. (2-tailed)	.000	
	N	171	172

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

Table 8

*Academic Self-Efficacy (ASE) and Support from Family/Friends (VP)*

		ASE	Social Support
ASE	Pearson Correlation	1	.371**
	Sig. (2-tailed)		.000

	N	172	172
Social Support	Pearson Correlation	.373**	1
	Sig. (2-tailed)	.000	
	N	172	172

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

Table 9

*Self-Efficacy and Vicarious Learning (VL)*

		Self-Efficacy	VL
Self-Efficacy	Pearson Correlation	1	-.055
	Sig. (2-tailed)		.478
	N	172	172
VL	Pearson Correlation	-.055	1
	Sig. (2-tailed)	.478	
	N	172	172

Table 10

*Self-Efficacy and Locus of Control (LOC)*

		Self-Efficacy	LOC
Self-Efficacy	Pearson Correlation	1	.351**

	Sig. (2-tailed)		.000
	N	172	172
LOC	Pearson Correlation	.351**	1
	Sig. (2-tailed)	.000	
	N	172	172

---

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

Table 11

*Self-Efficacy and GPA*

---

		Self-Efficacy	GPA
Self-Efficacy	Pearson Correlation	1	.006
	Sig. (2-tailed)		.955
	N	172	92
Cumulative GPA	Pearson Correlation	.006	1
	Sig. (2-tailed)	.955	
	N	92	92

---

Table 12

*Regression Analysis Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489 <sup>a</sup>	.240	.217	4.19395

---

*Note.* DV is efficacy. Predictors: (Constant), LOC, Instructor Support, VL, PA VP from educator and VP from friends/family

Table 13

*ANOVA*

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	914.425	5	182.885	10.398	.000 <sup>b</sup>
Residual	2902.218	165	17.589		
Total	3821.605	170			

*Note.* DV is self-efficacy. Predictors: (Constant) instructor's support; social support; LOC; PA, VL

Table 14

*Predictors of ASE*

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	T	
1	(Constant)	7.585	2.998		2.530	.012
	Instructor Support	.123	.050	.186	2.475	.014
	Social Support	.374	.116	.249	3.235	.001
	LOC	1.195	.335	.253	3.565	.000
	VL	-.135	.110	-.085	-1.227	.221
	PA	.407	.655	.043	.621	.535

*Note.* Dependent Variable: Self-Efficacy. Predictors: (Constant); VP via instructor support; VP via support from family/friends; LOC; VL, PA via random condition

## Appendix A

### Houston Baptist University ADULT SUBJECT CONSENT FORM

Primary Investigator:

Name: Joseph Pelletier, Ph.D.

E-mail: [jpelletier@hbu.edu](mailto:jpelletier@hbu.edu)

Office Phone: 281 649 3051

Office: Hinton 328 A

Student Researcher(s):

Rickki DeLeon

Title of Project:

Exploring Factors Associated with Academic Self-Efficacy

I acknowledge that on \_\_\_\_\_ 2019, I was informed by Rickki DeLeon of Houston Baptist University's Department of Psychology of a project having to do with the following:

The purpose of this study is to examine the factors that influence the level of confidence students have regarding school. There is no monetary compensation for participating in this study.

Thank you for your time and contributions.

I am fully aware of the nature and extent of my participation in this project and the possible risks involved or arising from it. I understand that I may withdraw my participation in this project at any time without prejudice or penalty of any kind. I hereby agree to participate in the project.

Printed name: \_\_\_\_\_

Signature: \_\_\_\_\_

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

Date: \_\_\_\_\_

\*Subject should sign two copies of this form. Keep one copy and return the other to the investigator.

## **Appendix B**

### Condition Groups

The following scenarios will be used to help evaluate the influence of performance accomplishments on academic self-efficacy.

#### Scenario A

Think back to a time that you studied for a class exam. To prepare for the exam, you asked questions in class, you took good notes, you studied at home and you studied with friends or other classmates. At times, you even looked up answers to your questions online. Test day had arrived. You read through the questions carefully and you took your time on the exam. When the exams are returned, you notice your grade is the grade you hoped to get! All off your work and dedication is reflected by this grade.

#### Scenario B

Think back to a time that you studied for a class exam. To prepare for the exam, you asked questions in class, you took good notes, you studied at home and you studied with friends or other classmates. At times, you even looked up answers to your questions online. Test day had arrived. You read through the questions carefully and you took your time on the exam. When the exams are returned, you notice that your grade is much lower than expected! None of your work and dedication is reflected by this grade.

## Appendix C

### Students' Evaluation of Teaching Effectiveness Rating Scale

(SETERS) by Toland and De Ayala (2005)

#### Item

For the following statements we would like you to respond by indicating your level of agreement with each statement about this course instructor, using the number codes provided below.

Does Not Apply	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
0	1	2	3	4	5

#### Instructor/Student Interactions

\_\_\_\_\_ The instructor encouraged me to ask questions during class.

\_\_\_\_\_ The instructor encouraged me to participate in class discussions.

\_\_\_\_\_ The instructor encouraged class discussion.

\_\_\_\_\_ The instructor encouraged me to express my opinions about course material.

\_\_\_\_\_ The instructor encouraged me to share my knowledge about course content.

\_\_\_\_\_ The instructor respected my opinions about course content.

\_\_\_\_\_ The instructor encouraged me to interact with other students in class.

\_\_\_\_\_ The instructor was informative when responding to students' questions in class.

\_\_\_\_\_ The instructor could be contacted outside of class time.

\_\_\_\_\_ The instructor promoted a comfortable learning atmosphere.

## Appendix D

### Social Support from Family and Friends

Participants' perceived environmental support is measured by utilizing the family and friend support for attending college subscale of the Perceived Environmental Support Scales (Garriott & Nisle, 2018).

#### Perceived Environmental Support Scales

For each of the statements below, circle the response that best characterizes how you feel about the statement, where 1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree and 5= Strongly Agree.						
		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Items						
<b>Family and friend support for attending college</b>						
I have received encouragement from my friends for pursuing college.		1	2	3	4	5
I feel that my family members support my decision to attend college.		1	2	3	4	5
I feel that close friends or relatives are proud of me for making the decision to attend college.		1	2	3	4	5
I feel supported for my decision to attend college from important people in my life.		1	2	3	4	5

## Appendix E

### Self-Efficacy

Participant self-efficacy is measured by utilizing the self-efficacy subscale of the Academic Motivation Survey (Wu & Fan, 2017).

#### Self-Efficacy Scale

For each of the statements below, circle the response that best characterizes how you feel about the statement, where

1= Strongly Disagree, 2= Disagree,

3= Neither Agree nor Disagree,

4= Agree and 5= Strongly Agree.

Items	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
<b>Self-Efficacy</b>					
I am confident in my ability to concentrate and stay fully focused on the materials being presented throughout each class period	1	2	3	4	5
I am confident in my ability to memorize and recall on demand the facts and concepts covered in my classes.	1	2	3	4	5
I am confident in my ability to focus exclusively on understanding and answering questions and avoiding breaks in my concentration during exams.	1	2	3	4	5

I understand the facts, concepts and arguments covered in my classes as they are presented in lectures and the textbook.		1	2	3	4	5
I am confident in my ability to explain the facts, concepts and arguments covered in my classes clearly to others in my own words.		1	2	3	4	5
I am able to discriminate between the more important and less important facts, concepts and arguments covered in my class.		1	2	3	4	5
I am able to make understandable course notes which emphasize, clarify and relate key facts, concepts and arguments as they are presented in lectures and the text.		1	2	3	4	5

## Appendix F

### Participant Demographics

What is your age? \_\_\_\_\_

With what gender do you identify? \_\_\_\_\_ Male \_\_\_\_\_ Female

With which race/ethnicity do you identify?

\_\_\_ White or Caucasian \_\_\_\_\_ Black or African American

\_\_\_ Asian or Asian-American \_\_\_\_\_ Hispanic or Latino/a

\_\_\_ Native American or American Indian \_\_\_\_\_ Other

Please indicate your current academic classification

Freshman \_\_\_\_\_ Sophomore \_\_\_\_\_ Junior \_\_\_\_\_ Senior \_\_\_\_\_

What is your cumulative GPA?

Please select the number of family members that have attended college, university or another institution of higher education

1      2      3      4      5      6      7      8      9      10+

Please indicate the degree to which you agree with the following sentence

I feel like I am in control of my life

Strongly Disagree Agree	Disagree	Neither Agree nor Disagree	Agree	Strongly
1	2	3	4	5