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## INTRODUCING A MINDSET INTERVENTION TO IMPROVE STUDENT SUCCESS

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### ABSTRACT

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Aim/Purpose	The purpose of this paper is to introduce, describe, and document the methods involved in the preparation of a mindset intervention built into a freshmen development course, and established after years of longitudinal research, that is designed to have a positive impact on the outlook, achievement, and persistence of first generation and under-prepared students.
Background	A number of studies conducted in the past fifteen years have concluded that grit, the persistence and perseverance to achieve goals, and growth mindset, the belief that skills and intelligence can be developed, are positive predictors of achievement; however, little focus has been placed on the implications at institutions purposed to educate minorities, first generation college students, and learners from diminished socio-economic backgrounds.
Methodology	A series of models were created, custom self-assessment scales designed, and a lesson plan prepared purposed to deliver a mindset intervention to edify students about and change perceptions of grit, locus of control/self-efficacy, growth mindset, and goal setting. The mindset intervention, as presented in this paper, was delivered as part of a pilot implementation to students enrolled in a freshmen professional development course at a Mid-Atlantic HBCU in the Fall of 2019.
Contribution	This qualitative paper documents an ongoing initiative while providing a workable template for the design and delivery of a mindset intervention that

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is believed will be highly effective with first generation and socio-economically disadvantaged learners. It represents the third paper in a five paper series.

Recommendations for Practitioners	As part of a commitment to positive student outcomes, faculty and administrators in higher education must be constantly exploring factors that may, or may not, impact student success.
Recommendations for Researchers	Research is needed that explores elements that may help to contribute to the success of under prepared college students, in particular those who are from low income, first generation, and minority groups
Future Research	The authors have introduced the mindset intervention with freshmen business students enrolled in a required professional development course. Results of the self-assessments and reflection questions are being collected and coded. Additionally, students are being administered a survey designed to measure the perceived efficacy of the initiative.
Keywords	grit, growth mindset, mindset intervention, self-efficacy, social cognitive theory, learning intervention, student retention, student success, business education, first generation college students, HBCU, minority learners, UMES, University of Maryland Eastern Shore, learning self-efficacy, goal setting, grit in education

## INTRODUCTION

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Success is much more than simply talent meeting opportunity. Rather, self-regulation, resilience, and mindset play a major role in determining ones achievement (Buzzetto-Hollywood, Quinn, Wang, & Hill, 2019). According to Burgoyne, Hambrick, Moser, and Burt (2018), “mindset refers to a person’s beliefs about the nature of their abilities—whether they believe their ability in a given domain is malleable or fixed.” (p.21)

The concept of growth mindset is most commonly associated with the work of Stanford University Professor Carol Dweck (2018), who explains that growth mindset is the belief that cognitive capabilities are not permanent but rather can be developed through hard work and dedication. An individual who possesses a growth mindset thrives on challenges and looks upon failures as learning opportunities from which one gains valuable feedback to help one continue on their journey forward to success. The opposite of a growth mindset is a fixed mindset, the belief that talent is set and unchanging and cannot be improved with practice and dedication. A person with a fixed mindset prioritizes success, is risk averse, and is derailed by setbacks.

Since growth mindset is anchored in the confidence one has in one’s own personal development, having a growth mindset requires that one has positive self-efficacy. Self-efficacy is a concept that refers to the confidence that one has in one’s innate ability to achieve goals. Self-efficacy was introduced by Albert Bandura (1977) and lies at the center of his social cognitive theory which posits that learning occurs in a social context that involves a dynamic and reciprocal interplay between the person, their environment, and their behaviors. Self-efficacy comes into play with the idea that the level of a person’s confidence in his or her ability to successfully perform a behavior has a direct impact on one’s goal achievement.

Findings have consistently shown that self-efficacy beliefs and mindset have a major influence on student success, impacting how a learner experiences and responds to learning situations and setbacks (Passarelli, 2014; Vuong, Brown-Welty, & Tracz, 2010). As such, in recent years the concept of

introducing interventions purposed to improve mindset and self-efficacy have been growing in popularity. But, what is a mindset intervention? There are no firm definitions of a mindset intervention; however, Passarelli (2014) explains:

“Interventions are not complicated. They can be as simple and low-cost as changing the kind of encouragement the student receives in an online lesson, or giving them a one-hour session on how effort and struggle increase academic capabilities.”

The goal of any mindset intervention is to improve a student’s frame of mind and therefore increase learning, and the evidence indicating efficacy of mindset interventions is strong (Dweck, 2018; Passarelli, 2014). Studies have found that mindset interventions are successful at increasing the grit (persistence and resilience to achieve goals) and academic performance of students (DeBacker et al., 2016; Dweck, 2018) and that they are also particularly effective with students from traditionally underserved groups (Claro, Paunesku, & Dweck, 2016). Accordingly, there is a small, but growing, number of minority serving institutions that are exploring the incorporation of mindset interventions as part of the total student experience.

The following paper will focus on the preparation of a mindset intervention established after years of longitudinal research that is purposed to have a positive impact on the outlook, achievement, and persistence of first generation and under-prepared students. The sections of the remainder of the paper are as follows: background, literature review, methodology, mindset intervention discussion, and conclusion and future work. This qualitative paper documents an ongoing initiative and represents the third paper in a five paper series.

## **BACKGROUND**

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Since, the initiative presented in this paper is contextualized at a Historically Black College or University (HBCU) it is essential to provide relevant information about HBCUs, the institution in question, and prior research conducted at said institution that inspired the effort under discussion. In many ways HBCUs are uniquely American institutions that are representative of a legacy of systematic oppression of marginalized groups. Founded during a time of forced segregation, for over 100 years Historically Black Colleges and Universities have existed to provide educational opportunities to students who might be otherwise disregarded (Buzzetto-Hollywood and Mitchell, 2019; Schexnider, 2017). Currently, there are 101 accredited HBCUs educating nearly 300,000 students (Buzzetto-Hollywood & Mitchell, 2019). As institutions of higher education, HBCUs are found to provide deeply supportive educational environments that are unparalleled elsewhere in the United States, with Black graduates of HBCUs more likely than Black graduates of majority serving institutions to be thriving (Buzzetto-More & Mitchell, 2009; Buzzetto-More & Ukoha, 2009; Seymour & Ray, 2015).

HBCUs have as their missions to engage and uplift students who are often marginalized (Lomax, 2006; Seymour & Ray, 2015). Gregory Clay of *The Undeclared* points out that this is because “HBCUs operate with a special mission in mind and a higher cause” as they seek to elevate and improve traditionally underserved communities (Clay, 2016). While the original challenges that existed during reconstruction and Jim Crow no longer exist, new educational inequities present themselves at today’s HBCUs, which impact students coming from historically marginalized communities (Buzzetto-Hollywood, Wang, Elobeid, & Elobeid, 2018; Lomax, 2006)

Established in 1886, the University of Maryland Eastern Shore (UMES) is a Historically Black, 1890 land grant institution. It is a member of the University system of the State of Maryland and primarily serves first generation, low income, and minority learners (Buzzetto-More, 2015). The student population is approximately 3400, as of the fall of 2016, with a student body that is 78% African American, 9.6% White, 1.4% Hispanic, and 11% international. The gender distribution of the University is 64% female and 36% male. The freshmen-to-sophomore retention rate is 71%, and the graduation rate is 41%. The student to faculty ratio is 15 to 1 and 85% of students receive financial aid. UMES was ranked in the top 20 among Historically Black Colleges and Universities (HBCU) in 2018 and

2019 and the acceptance rate for applying students is 62.4% with the majority of students coming from the Mid-Atlantic region (Buzzetto-Hollywood et al., 2018). UMES has a long history of providing academic programs and services for ethnically and culturally diverse students and toward that end, offers programs and assistance that attract, serve, retain, and graduate many first-generation college students.

The UMES Department of Business, Management, and Accounting (DBMA) is accredited by the Association to Advance Collegiate Schools of Business (AACSB) International. The Department offers a range of programs including business administration, accounting, marketing, finance, and business education. Additionally, certificate programs in business, marketing, and financial analytics were recently approved. The Department has an Assurance of Learning Committee that is purposed to continuously explore student learning outcomes through meaningful assessment, explore factors impacting the student experience, identify mechanisms through which teaching and learning can be improved, and promote innovative teaching strategies.

With an active commitment to student success, a series of studies were undertaken in the UMES DBMA. In the first study (Buzzetto-Hollywood et al., 2019), students were administered the standard 12-Question Grit Scale, developed by the team at the UPENN Character Lab, with the addition of a series of validated questions that sought to measure perceived self-learning efficacy. Additionally, student performances in online courses were recorded and correlations conducted. Basic statistical analyses such as mean, mode, standard deviation, variance, and confidence interval were calculated. Two hypotheses were introduced as part of this study and tested with Anovas and cross tabulations. The study found that higher grit scores correlated progressively to both self-discipline and self-efficacy but that a positive relationship to student achievement in fully online courses as measured with a p value of greater than .05 could not be confirmed.

The second study (Buzzetto-Hollywood & Mitchell, 2019) examined whether grit was a contributing factor to student persistence and success at minority serving institutions. The research study was initiated in the Fall of 2014 with the administration of the standard 12-item Grit assessment to all freshmen students enrolled in the business department. Students were then followed longitudinally over a five year period with GPA and persistence to graduation documented. During the analyses, grit score was compared to participant first year GPA's as well as retention and persistence to graduation via comparison tables and ANOVAs. According to the findings, there is a significant positive correlation between higher grit scores and both GPA and persistence to graduation. First year GPA, however, was not found to be a reliable predictor of academic success.

Following a thoughtful review of the results of both studies, it was concluded that grit alone might not be enough and that in order to have a significant impact on student success a change in mindset may be in order. This qualitative paper documents an ongoing initiative by introducing a mindset intervention that is purposed to be particularly effective with first generation and socio-economically disadvantaged learners.

## LITERATURE REVIEW

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There has been much focus in the literature over the past decade on the personality traits that impact student success. What has emerged over the years has been such concepts as grit, mastery goal orientation, and growth mindset and self-efficacy. Mindset interventions have been introduced a mechanism by which educators can build these desired traits in learners.

### *GRIT*

Burgoyne et al. (2018) assert that grit and mindset go hand in hand. Duckworth, Peterson, Matthews, and Kelly (2007) introduced the construct of grit explaining that grit is a sustained capacity to maintain interest and effort in challenging long-term projects. More specifically, it is acknowledged as the “tenacious” long-term pursuit of goals despite setbacks and obstacles (Duckworth & Gross, 2014).

Many studies have reported that grit can serve as a predictor of success (Buzzetto-Hollywood & Mitchell, 2019). For example, Eskreis-Winkler, Duckworth, Shulman, and Beal (2014) examined high school juniors in 98 Chicago Public Schools who completed the 12-item grit assessment. According to the results, students with higher grit scores were more likely than their less gritty peers to graduate from high school. Additionally, when cadets at West Point were examined, higher grit scores were found to be a powerful prognosticator of persistence (Duckworth & Quinn, 2009). Research by Flaming and Granato (2017) found that grit levels have a direct relationship between overcoming adversity and perseverance. Further, two experiments by Dale, Sampers, Loo, and Green (2018) concluded that the choice to continue forward or cease activities can largely be predicted by differences in grit: individuals higher in grit are more likely to persist in challenging tasks. This relationship; however, was only observed when a known reward was available that the participants believed that they had the ability to achieve. Recently, Tang, Wang, Guo, and Salmela-Aro (2019) conducted a study in Finland that investigated the association of grit and goal attainment as well as whether growth mindset and goal commitment impacted grit with a population of 2018 students in 6<sup>th</sup>-9<sup>th</sup> grades. According to their findings, grit is associated with both increased engagement and academic achievement. From a behavior standpoint, grittier individuals are found to participate in more self-regulated learning and deliberation (Wolters & Hussain, 2015). Finally, Park, Yu, Baelen, Tsukayama, and Duckworth (2018) found that grit has a direct relationship on the ways that people seek and retain information. Grittier individuals are known to engage in activities to seek meaning and purpose, in addition to having abilities that are malleable versus something that is fixed, also referred to as growth mindset (Park et al., 2018).

### ***MASTERY GOAL ORIENTATION***

The literature has linked grit in students to clarity of purpose and being mastery goal oriented (Arslan, 2014). Whereas most people set a performance goal where they seek to achieve a predetermined level of satisfactory performance in relation to social comparisons and so to avoid a negative evaluation, being mastery goal oriented is a total commitment to excellence and mastery (Arslan, 2014). Mastery goal oriented students have a focus on acquiring knowledge and self-improvement (Park et al., 2018). With a mastery goal orientation indicators of success are self-designated and internalized rather than being based on external indicators. For students, it is a focus on learning and not just grades and improvement over appearances. Having a mastery goal orientation has been shown to lead to high levels of engagement and resiliency in the face of failure (Brooke, 2012). Finally, being mastery goal oriented relates to growth mindset which is frequently explored alongside grit.

### ***GROWTH MINDSET***

Having a growth mindset refers to an individual being in a state where they prioritize growth and believe that they are likely to succeed given enough time and effort (Dweck, 2018). Growth mindset requires that one has a belief in one's own self-efficacy, with self-efficacy referring to the confidence that one has the innate ability to achieve goals (Bandura, 1977, 1997). Findings have shown that self-efficacy beliefs and mindset have a major impact on GPA and persistence to graduation (Vuong et al., 2010).

An individual with a growth mindset looks at a new challenge as a marathon rather than as a sprint. It requires taking a long term approach and having a commitment to persisting through a long journey to success that requires hard work and dedication (Dweck, 2018). The opposite of a growth mindset is a fixed mindset, the belief that talent is set and unchanging and cannot be improved with practice and dedication. A person with a fixed mindset is easily discouraged and derailed.

A growth mindset, positive self-efficacy, and grit are all desirable traits that have been shown to lead to increased student success. But, how do we build these advantageous traits in students? The answer that has been proposed by, and which is currently being explored in, the literature is mindset interventions.

## ***MINDSET INTERVENTIONS***

Studies have found that mindset interventions are successful at increasing the grit, self-efficacy, and academic performance of students (Claro et al., 2016; DeBacker et al., 2016; Dweck, 2018). In particular, the literature posits that building the growth mindset of students who come from underserved areas is extremely important to add to the overall growth and production of a student (Claro et al., 2016).

In an effort to understand the research on mindset interventions, Sarrasin et al. (2018) conducted a meta-analysis of 10 peer-reviewed studies involving participants from age 7 to adulthood. According to their findings, attempts to build growth mindset by teaching neuroplasticity have an overall positive effect on motivation and achievement. Additionally, they found that mindset interventions are most beneficial for at-risk students.

Passarelli (2014) interviewed Stanford Professor Carol Dweck who reflected on her years of work and research on mindset interventions explaining that:

- Mindset interventions are more effective than study skills training,
- Students who have received mindset interventions have higher grades and measurable motivation than their peers,
- Kindergartners who received interventions read earlier than their peers,
- Poor performing high school students increased their GPA with growth mindset training.
- Entering freshmen who received a growth mindset intervention at the beginning of their college experience were more likely to complete a full load of courses with the effect strongest among at-risk students.

Perez (2015) introduced an intervention model, known as the Grit Effect (GE), for nurturing and strengthening grit in students on academic probation as a means of increasing their GPA. Based on the application of her intervention model, she concluded that grit as a personality characteristic can be built and strengthened and that it serves as a positive determinant of student academic success that is a better indicator than IQ.

Harackiewicz et al. (2014) conducted a mindset intervention that was focused around reducing the social-class achievement gap by using self-affirmation and affirming goals that students set and controlled. The subjects were students in Biology courses at the University of Wisconsin-Madison. The end result of the study was that the intervention narrowed the achievement gap between first-generation and continuing generation students for course grades by 50% and increased retention in a critical gateway course by 20%. They concluded that “educators can expand the pipeline for first-generation students to continue studying in the biosciences with psychological interventions.” (p. 375)

Andersen and Nielson (2016) conducted a mindset intervention with parents, finding significant positive impact on the reading and writing skills of socio-economically disadvantaged children whose parents received a few children’s books and information about the value of supporting children when learning to read. More specifically, they measured the biggest effect among those children whose parents stated before the intervention that they believed that reading abilities are relatively fixed

Burgoyne et al. (2018) researched the impact of a short duration online intervention on mindset of intelligence, self-efficacy, challenge-approach motivation, grit, and performance on cognitive ability tests. Following use of exploratory factor analysis and multi-level modeling, participants who received a mindset intervention reported more growth mindset, internal locus of control/self-efficacy, challenge-approach motivation, and self-determination. The mindset intervention however did not alter cognitive ability scores or grittiness.

So, why is so much of the focus of mindset interventions concentrated on traditionally underserved populations? For today's youth, there are many different influences and dynamics. From parents to the increased number of outside factors such as peer pressure and social media, students are growing up in environments that can directly impact their trajectories (Yeager et al., 2018). Further, students' environments both within the home and school can impact the attitudes learners hold towards education (Lin-Siegler, Dweck, & Cohen, 2016). Individuals coming from diminished socioeconomic backgrounds do not have the same experiences as those who come from more middle class, or affluent backgrounds (Jury et al., 2017). As such, many students coming from low socioeconomic status environments walk into post-secondary environments with defeated mindsets, depression, and an inability to be able to talk about and share experiences with others who have the same experiences as they do (Jury et al., 2017). Without some form of positive influence or mindset change, many students will experience "imposter syndrome" where they feel as though they do not belong and it is only a matter of time before others around them will notice the same (Jury et al., 2017).

Since, mindset interventions have been shown to be particularly effective with underserved students, it stands to reason that they should be adopted widely and be effective at delivering positive outcomes at HBCUs (Buzzetto-Hollywood & Mitchell, 2019; Claro et al., 2016; Clay, 2016; Passarelli, 2014). Johnny C Taylor (Clay, 2016), President and CEO of the Thurgood Marshall College Fund, recommends using mindset interventions to build positive skills in HBCU students, suggesting the use of predictive self-assessment tests and analytics to build the knowledge and understanding of grit, resilience, and persistence.

The literature clearly shows the benefits of mindset interventions and the importance of building grit, growth mindset, and positive self-efficacy in students. The initiative being explored in this paper seeks to answer the call to action put forth by Taylor through the introduction of a mindset intervention in a freshmen professional development course at a HBCU. The following sections of the paper will explore how the project was developed as well as introduce the tools and procedures involved. Finally, a customizable plan for delivering the lesson is also offered.

## METHODOLOGY

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This is a qualitative paper that is focused on the preparation of a mindset intervention purposed to have a positive impact on the outlook, achievement, and persistence of first generation and under-prepared students. The initiative was inspired following two studies that examined, and found correlations between, grit and student success at the minority serving institution under consideration and where the authors postulated that, while building the grittiness of freshmen students leads to positive student outcomes, grit alone is not enough. In fact, it was hypothesized that grittiness without clarity of purpose, positive self-efficacy, and growth mindset might result in students who are gritty but may not be exerting their energies appropriately. This epiphany helped to inspire the group of authors in this paper to collaborate on the development of this mindset intervention.

This entire effort is theoretically grounded, more specifically, the initiative is influenced by Social Cognitive Theory (Bandura 1977, 1997) or the idea that learning has interpersonal and intrapersonal dimensions and involves the interplay and reciprocal determinism between personal factors of individuals, behavior, and the environment. Social Cognitive Theory posits that a person can be conditioned through consequences to expect positive and/or negative consequences and will adjust their expectations, interactions, and behaviors accordingly. Self-efficacy is at the center of Social Cognitive Theory and refers to the level of belief one has in their own abilities to exert the behaviors necessary to success in a particular endeavor. Grit and growth mindset subsequently represent an evolution of our understanding of self-efficacy.

For this project, it was decided that a series of custom models and self-assessments would be developed. This involved conducting an exhaustive review of the literature on the related topics of self-efficacy, grit, growth mindset, and goal setting. Additionally, any pre-existing self-assessments and/or

scales available on those topics were considered. It was decided early on that this iteration of the project would continue to use the 12 item grit assessment previously deployed in the two earlier studies. While a newer 8 item grit scale assessment is now available, it was decided that staying with the same scale assessment questionnaire would work best with established baselines. Both the 12 and 8 item grit scale questionnaires were created and validated by the University of Pennsylvania (UPENN) Character Lab.

Next, a series of self-assessments were prepared. The preparation began with the identification of indicators of positive self-efficacy, growth mindset, and goal setting. These indicators were turned into agreement statements and placed alongside a five point Likert scale. The instruments were reviewed by all authors before being presented for formal evaluation. An activity workbook was prepared that contained the self-assessments along with a series of reflective exercises. Finally, a lesson plan was created to inform educators how to pace and deliver instruction effectively.

In June of 2019, the models, self-assessments, reflective exercises, and lesson plan were presented to and reviewed by attendees at the UMES Innovations in Teaching and Learning Conference held in Princess Anne, Maryland. Attendees were a combination of faculty and student support experts from such institutions as the University of Maryland College Park, the University of Maryland Eastern Shore, Worwic Community College, Garrett Community College, and Harford Community College. During a three hour long session, participants experienced a truncated version of the lesson and also completed a questionnaire that focused on the efficacy of the instruments, activities, materials, and lesson. Additionally, a structured focus group was held with participants in order to gather more in-depth insights. The result of the feedback were subsequently evaluated and used to amend and improve the instruments.

The next iteration of the mindset intervention was presented in September of 2019 at the Annual Conference on Teaching and Learning Assessment in Philadelphia, Pennsylvania. Once again, meaningful feedback was elicited and used to engender additional further improvements.

The mindset intervention, as presented in this qualitative paper, was used during the pilot implementation with students enrolled in a freshmen professional development course at a Mid-Atlantic HBCU in the Fall of 2019. The results of the pilot in the form of student satisfaction surveys and student performance data are being collected and will be reported in a future paper. While this section explored the methodology involved with the development of the initiative under exploration, the next section will discuss the actual deliverables.

## **MINDSET INTERVENTION DISCUSSION**

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In this section of the paper the models and accompanying self-assessment scales will be shared and discussed, and readers will be walked through the procedures of the lesson plan. The lesson procedures include the following topics and tasks: warm up activity, grit, self-efficacy, growth mindset, self-growth, goal setting and goal attainment, reflective meta-cognitive take home assignment, and closure. Following discussion of the various lesson procedures additional information about delivering the lesson is offered.

### ***WARM UP***

The intervention begins with a warm up. Warm up activities, or icebreakers, are used to help focus students on a new topic. During the warm-up activity students start by reflecting/imagining the topic. Since the topic will be first introduced during this section, it is important to set the foundation. The foundation calls for an opening activity to ask the following questions:

Thinking back over your life, what motivates you to do what you do? What was the driving force behind your decision making during your 12 years of preparatory education that prepared you for college? Describe and explain in 230 words your response.



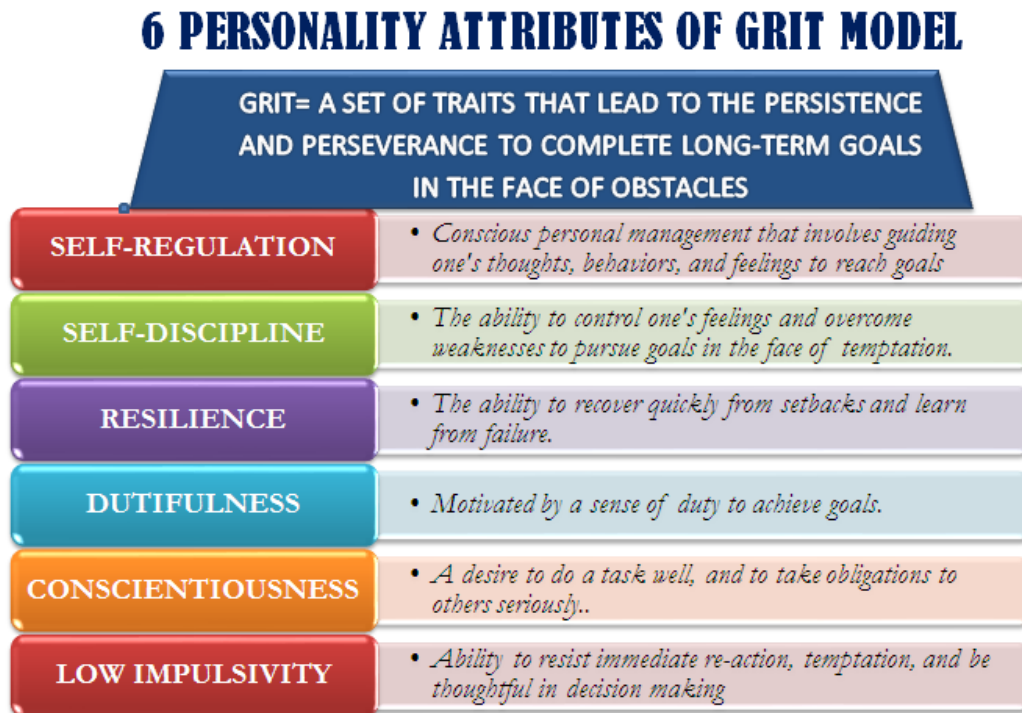
**GRIT**

As explained in the literature review, grit and mindset go hand in hand (Burgoyne, et al., 2018) and grit can be a predictor of success (Buzzetto-Hollywood & Mitchell, 2019). As such, this intervention introduces grit early. Students will complete the **12 Item Grit Scale** Questionnaire developed, introduced, and delivered by the UPENN Character Lab. The 12 Item Grit Scale Questionnaire is one of two instruments available from the character lab, the other is an 8-item version. Both versions are successfully used to generate a grit score/index and are accessible online at <http://angeladuckworth.com/research>.

Completion of the 12 Item Grit Scale Questionnaire should take no more than 5 minutes to complete. After the grit scale is completed, the faculty member will call around the room and engage students in a dialogue. Some of the “pre-identified” questions that can serve as discussion prompts could be statements on the grit questionnaire such as #2 “Setbacks discourage me.” And #6 “I have a difficulty maintaining my focus on projects that take more than a few months to complete.” The reason these two may be identified as discussion prompts is because they are skills that are particularly necessary for success in college.

Following the discussion, the faculty member introduces and discusses the *Six Personality Attributes of Grit Model*, created as part of this initiative and originally introduced in Buzzetto-Hollywood and Mitchell (2019). According to the Six Personality Attributes of Grit Model, the personality traits most commonly associated with grit include self-regulation, self-discipline, resilience, dutifulness, conscientiousness, and low impulsivity (Buzzetto-Hollywood et al., 2019; Buzzetto-More, 2015; Eskreis-Winkler et al., 2014; Goodwin & Miller, 2013).

Figure 1 presents the model where self-regulation is the ability to guide one’s behaviors in order to achieve goals, self-discipline is the ability to control weaknesses and apply one’s self towards the achievement of goals, resilience is the ability to recover from setbacks, dutifulness is having the sense of obligation to complete goals, conscientiousness is the vigilant desire to complete obligations, and low-impulsivity is the ability to resist temptation and be thoughtful before taking action.



**Figure 1: 6 Personality Attributes of Grit Model**

### ***SELF-EFFICACY***

Self-efficacy refers to a person’s positive belief that they have the capability to achieve goals. Self-efficacy is a concept that has been shown in the literature to have a major impact on student success (Vuong et al., 2010). During this portion of the lesson, students first complete the Academic Self-Efficacy Assessment that was created as part of the preparation of this intervention. It is based on five academic self-efficacy questions that were custom developed and that were influenced by both the literature and research on self-efficacy.

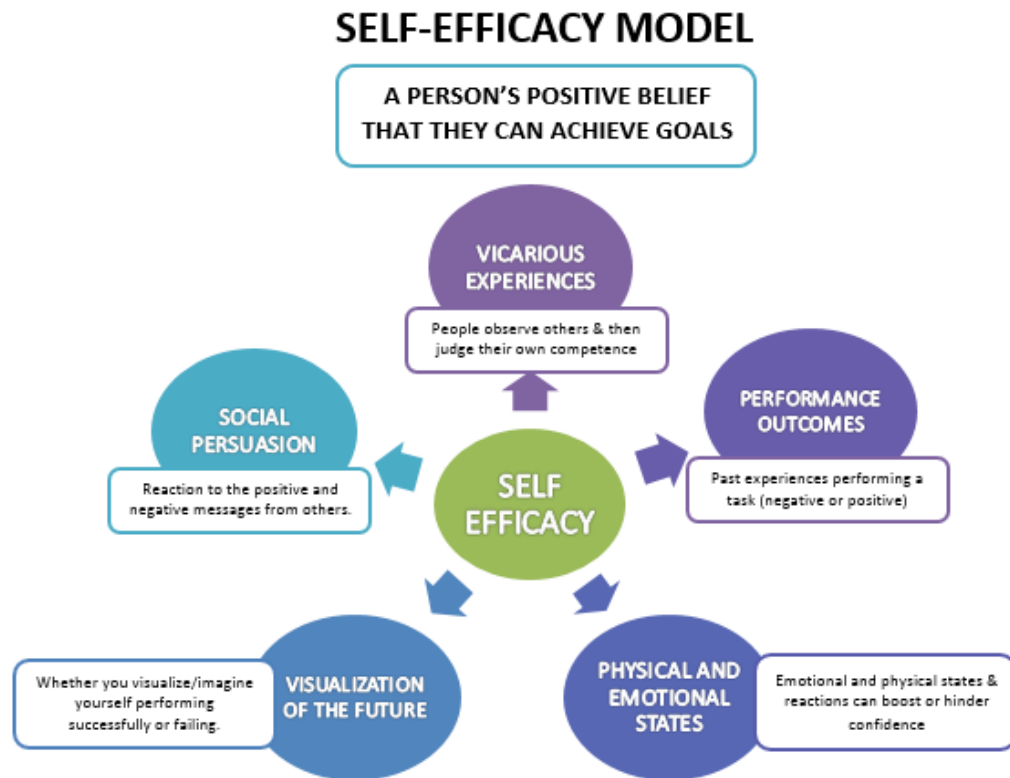
The Flesch Kincaid formula was used to consider the readability of the questions which provides the Flesch-Kincaid Grade Level score. Following the analyses, the score achieved was a 69.8 making this readable for participants with a U.S. 8th to 9th grade reading level. The questions were subsequently reviewed by two panels of educators. They are being piloted in the 2019-2020 academic year and are included in Table 1: Academic Self-Efficacy Assessment

**Table 1: Academic Self-Efficacy Assessment**

Please, rate your degree of confidence from very unconfident to very confident.

	<b>Very Confident</b>	<b>Confident</b>	<b>Neutral/ Undecided</b>	<b>Not Confident</b>	<b>Very Unconfident</b>	
I am confident in my ability to excel in my courses	5	4	3	2	1	
I am confident in my ability to pass challenging classes	5	4	3	2	1	
I am confident that I will graduate from college	5	4	3	2	1	
I am self-disciplined when it comes to my studies.	5	4	3	2	1	
I can overcome any obstacle I may face in a class	5	4	3	2	1	
To calculate, add your score for each question and divide by 5. The maximum score on this scale is 5 (strong self-efficacy), and the lowest score on this scale is 1 (no self-efficacy).						
Your Self-Efficacy Score _____						

Once students have completed their scores, the instructor will engage students in a brief discussion before introducing the UMES Self-Efficacy Model shown in Figure 2. The model is based on the work of Albert Bandura (1997) and is designed to illustrate the factors that impact self-efficacy which includes vicarious experiences or the way in which people observe others and then judge their own competence; performance outcomes, referring to past experiences performing a particular task and whether they were positive and/or negative; physical and emotional states, because emotional and physical states and reactions can boost or hinder confidence; visualization of the future, whether one imagines themselves succeeding or failing; and social persuasion, reactions to the positive and negative messages of others.



**Figure 2: UMES Self-Efficacy Model**

### Growth Mindset

Growth mindset is the belief that cognitive capabilities are not fixed but rather can be developed through hard work and dedication (Dweck, 2018), and positive growth mindset is linked to student achievement (Vuong et al., 2010). During this activity, the faculty member begins by having students complete the four self-assessment questions designed to engage student’s thought about their mindset.

The Flesch Kincaid formula was used to consider the readability of the questions which provides the Flesch-Kincaid Grade Level score. Following the analyses the score achieved was a 66 making this readable for individuals with an 8th to 9th grade reading level. The questions were reviewed by multiple panels of educators. They are being piloted in the 2019-2020 285 academic year and are included in Table 2: Academic Self-Efficacy Assessment

**Table 2: Growth Mindset Self-Assessment**

	Strongly Agree	Agree	Neutral/ Undecided	Disagree	Strongly Disagree	
You can learn new things, but you can't really change your basic intelligence.	1	2	3	4	5	
Your intelligence is something about you that you can't change very much.	1	2	3	4	5	
You have a certain amount of talent and intelligence and you really can't do much to change it.	1	2	3	4	5	
If you keep failing at something it is better to switch to something else where you have a better chance of succeeding	1	2	3	4	5	
To calculate add your score for each question and divide by 4. The maximum score on this scale is 5 (growth mindset), and the lowest score on this scale is 1 (fixed mindset).						
Your Mindset Score _____						

After completion of the self-assessment, the faculty member will lead students in a reflective discussion about fixed versus growth mindset and how, if at all, their mindset may have impacted their lives. Once the meaningful discussion has concluded, the faculty member will review the Fixed vs. Growth Mindset Model represented in Figure 3 which compares the qualities of a fixed versus a growth mindset explaining that individuals with a fixed mindset prioritize success and risk of failure at all costs, reject criticism and are hurt by negative feedback, avoid challenges, are easily derailed by setbacks, view those who are more successful as a threat, want reward without effort, and spend much of their time frontin'. Conversely, individuals with a growth mindset: prioritize growth and believe that they are likely to succeed given enough time and effort, accept criticism and negative feedback as constructive, embrace challenges, are resilient and persistent when faced with setbacks, view those who are successful as potential role models and mentors, embrace effort, and are honest with themselves and others without excuses or frontin'. The term "frontin" is a mainstay in the UMES Department of Business, Management, and Accounting. Introduced by longstanding associate professor, Dr. Bryant Mitchell, frontin' refers to how much time a student spends wasting their time and making excuses.



<p><b>FIXED MINDSET</b></p> 	<p><b>GROWTH MINDSET</b></p> 
<ul style="list-style-type: none"> <li>• Prioritizes success and avoids risk and potential of failure (limits growth).</li> <li>• Rejects criticism and is hurt by negative feedback.</li> <li>• Avoids challenges.</li> <li>• Derailed by setbacks and unlikely to persist in the face of obstacles.</li> <li>• Sees those who are more successful as a threat.</li> <li>• Wants reward without effort.</li> <li>• A lot of frontin!</li> </ul>	<ul style="list-style-type: none"> <li>• Prioritizes growth because of the belief that one is likely to succeed in time.</li> <li>• Accepts criticism and negative feedback as constructive.</li> <li>• Embraces challenges.</li> <li>• Resilient and persistent and not deterred by setbacks.</li> <li>• Sees those who are successful as a model.</li> <li>• Equates reward with effort.</li> <li>• No frontin!</li> </ul>
<p style="font-size: 2em;"><b>LOCUS OF CONTROL</b></p>	
<p><b>EXTERNAL</b></p> <p>THE CONSEQUENCES OF MY BEHAVIOR ARE OUTSIDE OF MY CONTROL</p>	<p><b>INTERNAL</b></p> <p>I CONTROL THE CONSEQUENCES OF MY BEHAVIOR</p>

Figure 3: Fixed Verses Growth Mindset Model

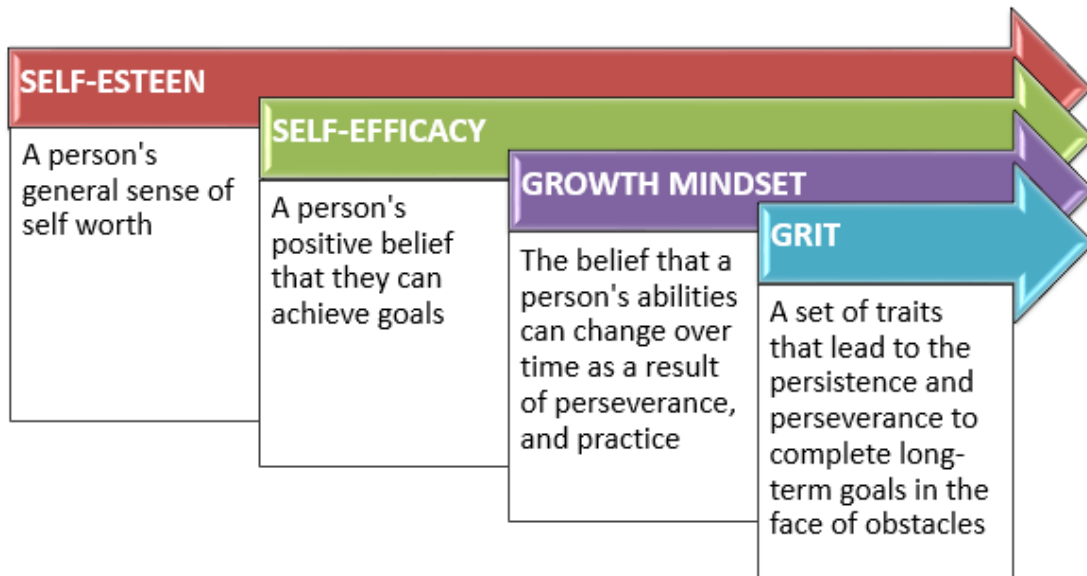


Figure 4: UMES Self-Growth Model

**UMES Self Growth Model**

In this next stage of the lesson, the faculty member will present and discuss a model specifically prepared for this lesson which is focused on self-growth. According to the model, self-growth encompasses self-esteem, self-efficacy, growth mindset, and grit. Self-esteem is defined as an individual's general sense of self-worth which is imperative to student achievement as one cannot have positive

self-efficacy without positive self-esteem. Self-efficacy is the positive believe that one can achieve goals, and growth mindset is the belief that abilities can change over time as a result of hard work. Finally, grit refers to a set of traits that lead to the persistence and perseverance in the face of obstacles. Figure 4 depicts the UMES Self-Growth Model.

### Goal Setting

Successful individuals practice goal setting. Mastery goal orientation is a term that refers to having the goal of learning and mastering the tasks according to self-set standards so that a learner is focused on developing, improving, and acquiring additional skills and knowledge as opposed to simply meeting adequate performance standards necessary for satisfactory feedback (Hsieh, 2011). As such, mastery goal oriented students have a focus on acquiring new knowledge and continuous self-improvement (Park et al., 2018).

Students begin the goal setting portion of the lesson by completing the 19 question goal setting self-assessment. These 19 questions were reviewed by multiple panels of educators and revised over several rounds accordingly. The Flesch Kincaid formula was used to consider the readability of the questions and a score of 90.1 was achieved making the instrument readable for individuals with a 5th grade reading level. The instrument is being piloted throughout the 2019-2020 academic year and is included in Table 3: Goal Setting Self-Assessment

**Table 3: Goal Setting Self-Assessment**

	Not Very Like Me	Unlike Me	Neutral/ Undecided	Like Me	Very Like Me
1. I set short-term goals for myself (like finishing all my homework or exercising for an hour).	1	2	3	4	5
2. I set long-term goals for myself such as earning a college degree or entering a career.	1	2	3	4	5
3. I set goals to achieve what I think is important.	1	2	3	4	5
4. I imagine what life will be like when I reach my goal.	1	2	3	4	5
5. My goals are meaningful to me.	1	2	3	4	5
6. My goals are based on my own interests and plans for the future.	1	2	3	4	5
7. I set goals to help me improve myself.	1	2	3	4	5
8. I set goals to help me be more successful in school.	1	2	3	4	5
9. I set goals to help me do my personal best.	1	2	3	4	5
10. When I want to learn something, I make small goals to track my progress.	1	2	3	4	5

	Not Very Like Me	Unlike Me	Neutral/ Undecided	Like Me	Very Like Me
11. I focus on my own improvement instead of worrying about whether other people are doing better than me.	1	2	3	4	5
12. Even if I lose a competition, I'm pleased if I have improved.	1	2	3	4	5
13. Based on everything I know about myself, I believe I can achieve my goals.	1	2	3	4	5
14. When I set goals, I think about barriers that might get in my way.	1	2	3	4	5
15. When I'm struggling, I set goals to help me improve.	1	2	3	4	5
16. I set goals that are challenging but achievable.	1	2	3	4	5
17. I set short-term goals to help me achieve my long-term goals.	1	2	3	4	5
18. When setting a goal, I think about my past successes and failures.	1	2	3	4	5
19. When I set a goal, I am confident that I can meet it.	1	2	3	4	5
To calculate your goal setting score add up all points and divide by 19. You can interpret your score like you would grades. Interpreting your results: 1.0-1.9= D, 2.0-2.9= C, 3.0-3.9= B, 4.0-5.0=A					

Once the self-assessment is completed, the faculty member will discuss the Goal Attainment Model that was developed to compliment this lesson. Depicted in Figure 5, the Goal Attainment Model assumes that an individual has goals, is committed to each goal, and that the commitment is most likely when goals are made public, when the individual has an internal locus of control, and when the goals are self-set rather than assigned. The goals themselves should be challenging, specific, and attainable. Additionally, the individual must possess positive self-efficacy, a growth mindset, grit, clarity of purpose (knowing what exactly you want and how to get there), and have an absence of frontin'.

Following the presentation of the model, the instructor will lead a class discussion with students where students will be asked about their goal setting behaviors.

## GOAL ATTAINMENT MODEL



Figure 5: Goal Attainment Model

### Reflective Take Home Meta Cognitive Assignment

Students will be provided a take home packet. It asks students to report and reflect on their scores for grit, self-efficacy, growth mindset, and goal setting. It includes question prompts and spaces where they can enter short essay reactions. The reflective prompts include:

- *What does your grit score say about you? Are you gritty? How is your grit score reflective of your performance in life? Are you satisfied with your level of grittiness?*
- *Self-efficacy refers to a person's positive belief that they can achieve goals. Please, reflect on your self-efficacy. Do you have positive self-efficacy? How has your self-efficacy impacted your life? What factors have negatively influenced your self-efficacy and how can they be addressed moving forward?*
- *Is your mindset a growth mindset or a fixed mindset? How has your mindset helped or hurt you in life? What steps are you going to take moving forward to have a more growth oriented mindset?*
- *Reflecting on your goal setting score, what does your score say about you? How is your score reflective of your performance in life? Are you satisfied with your score? How do you intend to improve your ability to achieve goals?*

In addition to answering the reflective questions students are asked to complete a goal setting/day/week mapping and prioritization activity in order to get a full understanding on how to best utilize their time towards more effective goal achievement each day and week.

### Closure

The students will return the following week and submit their completed packet as well as two exit ticket activities that will be used to gauge the effectiveness of the material covered. The first is a sheet of paper asking the following questions: *“What are your take aways from this lesson? Do you feel it was helpful in understanding how you improve your mindset? Will you change anything since participating in these activities?”* The second is an anonymous online perception survey designed to further gauge the effectiveness and impact of the lesson. The survey is comprised of questions designed to gather basic demographic and socio economic information as well as a series of five point Likert scaled agreement statements. One



series of Likert scaled statements looks at each of the goals of the lesson and asks students whether as a result of the lesson they now have a better understanding of the particular concept such as “*As a result of this mindset intervention, I now have a better understanding of the self-efficacy.*” Another series of questions looks at anticipated change in behaviors such as “*As a result of what I have learned in this course, I will now engage in more goal setting.*” Finally, a series of questions explore overall student satisfaction such as “*The mindset intervention presented in this course will help me as a student.*”

**Lesson Procedures**

The authors assert that the mindset intervention lesson presented in this paper is easily replicable across institutions and that it may yield positive results with a wide range of learners. The lesson is designed to be delivered over 2-3 weeks of instruction in a course following a fifteen week three meeting hours a week format. The lesson can easily be modified and can be both lengthened and/or shortened as needed. The mindset intervention lesson procedures are represented in Table 4: Mindset Intervention Lesson.

All lessons have goals as without goals the purpose of a particular lesson is unclear. Learning goals represent broad statements that indicate the overall purpose of a learning endeavor. The learning goals for the mindset intervention lesson presented in this paper are as follows:

- Upon completion of this lesson, students will be able to describe and discuss the concepts of grit, self-efficacy, growth mindset, self-growth, and goal setting.
- Upon completion of this lesson, students will be able to discuss the importance of grit, self-efficacy, growth mindset, and goal setting on educational attainment and achievement.
- Upon completion of this lesson, students will have completed a set of activities where they will have reflected on their own grit, self-efficacy, growth mindset, and goal setting.
- Upon completion of this lesson, students will be able to engage in effective goal setting using the proscribed techniques.

**Table 4: Lesson Procedures**

<b>MINDSET INTERVENTION LESSON</b>		
<b>WARM UP</b>	Students write responses to question prompts followed by a live in-class discussion led by the instructor.	<b>WEEK ONE</b>
<b>GRIT</b>	Students complete the 12-item Grit Scale Assessment. Live class discussion about the results of the assessment. Overview and discussion of the 6 Attributes of Grit Model.	
<b>SELF-EFFICACY</b>	Students complete the Self Efficacy Self-Assessment. Live class discussion about the results of the assessment. Overview and discussion of the Self Efficacy Model.	
<b>GROWTH MINDSET</b>	Students complete the Growth Mindset Self-Assessment. Live class discussion about the results of the assessment. Overview and discussion of the Growth Verses Fixed Mindset Model.	<b>WEEK TWO</b>

<b>SELF-GROWTH</b>	Overview of the UMES Self Growth Model Instructor led class discussion,	
<b>GOAL SETTING</b>	Students complete the Goal Setting Self-Assessment. Live class discussion about the results of the assessment. Overview and discussion of the Goal Setting Model.	
<b>REFLECTIVE PACKET</b>	Students complete Reflective Homework Packet	
<b>CLOSURE</b>	Review of take away points Class discussion Reflection on Efficacy Completion of Perception Survey	<b>WEEK THREE</b>

***LIMITATIONS***

This paper is limited at this time in that it presented a mindset intervention lesson without any data that substantiates the efficacy of the lesson. This shortcoming is currently being remedied as the project is implemented with a pilot in the 2019-2020 academic year. Data from surveys will be collected, analyzed, and reported in a future paper.

**CONCLUSION AND FUTURE RESEARCH**

Prior research conducted by the authors, as well as many others, has shed light on the need to explore non-cognitive factors that may affect student performance such as grit, mindset, self-efficacy, and goal setting. This paper has presented a Mindset Intervention that has been informed by the literature, research, and input of experienced educators. Models and activities were created and the intervention has been implemented with students beginning in the fall of 2019

This paper asserts that a carefully crafted mindset intervention delivered to freshmen students from traditionally underserved populations will yield positive outcomes in terms of student success. Further, it moves forward the notion that mindset interventions have potentially broad implications with learners of all ages and skills levels and more initiatives such as the one highlighted in this paper series need to be introduced. As such, a goal of this paper is to encourage additional individuals within the educational community to undertake similar endeavors.

In order to measure the efficacy of the mindset intervention introduced in this paper, a two phased research study is being conducted. The first phase will report the results of the pilot year which will include student scores, feedback elicited from short essay questions, and the results of the student perception and satisfaction survey. The survey is specifically designed to measure students’ perceived efficacy of the mindset intervention under consideration. The second phase will be longitudinal in nature and track freshmen retention and graduation rates over time and postulate as to the impact of the intervention on student success. Additionally, a set of questions will be added to the Department of Business, Management, and Accounting’s senior exit survey. These questions will ask student to reflect back on what impact, if any, the freshmen mindset intervention had on them and their academic success.

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## BIOGRAPHIES

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