

Fostering College Persistence Through a High School Mentor Program

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I. Introduction

Many of today's employers consider completing a bachelor's degree as fundamental to their employment criteria, with 75% of available new job openings requiring a bachelor's degree to apply (Trend, 2022). While this phenomenon is primarily due to the perception that compared to non-degree holders, those with a bachelor's degree are more proficient with "hard and soft skills" (Groysberg et al., 2022, p. 2), the attainment of a bachelor's degree is also linked to a more desirable life that entails higher income, stable employment, and fewer physical ailments (Oreopoulous & Petronijvec, 2013). In fact, while COVID-19 negatively impacted student enrollment in four-year college programs, the latest figures from the National Student Clearinghouse Research Center (Berg et al., May 2023, Table 2) show approximately 7.9 million students enrolled in a public or private (non- or for-profit) four-year bachelor's program in the Spring 2023 term. However, when we compare this to 2022 data from the National Center for Educational Statistics, 32.9% of college students never fulfill the four-year program, of which 24.1% are first-time first-year students and 25.7% are first-time bachelor program students (Hanson, 2022).

Consequently, those who fail to complete a four-year college degree have higher unemployment rates and earn 33% less than bachelor's degree recipients (Hanson, 2022, para 1). Even when they attain employment, compared to non-college degree workers between the age of 20 to 69, male bachelor's degree holders acquire \$900,000 more, and female bachelor's degree holders make \$630,000 more in median earnings (Social Security Administration, 2015). Beyond the unemployment and income statistics, students who drop out, particularly those in disadvantaged populations, may needlessly experience insurmountable damage to their sense of belonging and individual abilities in the academic setting as they lose hope for a successful

future while also acquiring the responsibilities of student loan payments for an unfulfilled degree (Tretina & Hahn, 2022).

To increase four-year college enrollment and graduation of underprivileged and first-generation students, numerous higher education institutions and non-profit organizations have launched programs that specifically work with high-achieving students in this demographic eager to pursue higher education. Many of these programs are focused on mitigating the persistent achievement gap between low-income and affluent students and offer various academic and social supports, including subject-specific tutoring, college counseling, standardized test preparation, mentorship, and financial aid assistance that are critical in increasing a student's chance of not only enrolling in college but also remaining and completing their higher education studies. One of these programs is Minds Matter National, Inc. (MMN).

Organizational Context

MMN is a nationally renowned 501(c)(3) organization that offers a volunteer-run mentoring program for “accomplished high school students from low-income backgrounds” (Minds Matter Seattle, 2023a). After the 1991 launch of its first chapter in New York City, the organization expanded and currently has fourteen chapters nationwide (Minds Matter, 2022). According to their FY16 annual report, there were 611 attending students (i.e., “mentees”), 1,251 program alumni (i.e., “graduated mentees” or “graduates”), and 1,700 active volunteers offering academic enrichment, college prep, as well as overall program facilitation. The program continues to grow and was even featured in the New York Times gift-giving guide for its commendable work (Collins & Stephens, 2021).

Program Structure

While each chapter differs in size and organizational structure, they must follow a three-

year core program established by MMN, consisting of weekly sessions during the school year from the beginning of 10th grade to the end of 12th grade. However, since MMN does not support curriculum design, educational resources, or instructor training, each chapter has full autonomy in program implementation and tracking of student progress.

Weekly mentee sessions occur on Saturdays from September through May. In the morning, mentees engage in a comprehensive academic program that differs by grade. Following a quick lunch break, they participate in mentoring and enrichment, focusing on college readiness and other activities (Minds Matter Seattle, 2023a). During the morning session, sophomore mentees alternate weekly between two hours of math or writing and critical thinking, junior mentees receive standardized test preparation, and senior mentees engage in college counseling and related programming, all led by volunteers, often with significant academic or professional experience in that subject or program area. When chapters are not in session from June to August, all rising junior and senior mentees attend fully paid self-selected summer academic or leadership programs at various institutions in the U.S. and abroad. Each chapter, not MMN, is responsible for program selection and incurred costs.

As mentioned, much of the programming is managed and run by local volunteers who first begin as mentors or instructors. As volunteers become more invested in each chapter's work, they often step into executive positions more focused on programming and operational needs such as fundraising, recruitment, and grant writing. While smaller chapters rely solely on volunteers, some chapters have paid staff (often full-time) to manage daily operational responsibilities. As these paid employees do not report to MMN but to chapter board directors, each chapter fully covers their salaries.

Minds Matter Seattle (MMSEA) Background

Launched in 2013, Minds Matter Seattle (MMSEA) is the eleventh chapter of the organization. Starting with just six mentees and ten volunteers in 2013, the number of mentees and volunteers has gradually increased each year. In academic year 2022-2023, the total number of mentees was 29 (with 13 sophomores, nine juniors, and seven seniors), mentors paired with these mentees was 57 (with 25 sophomore mentors, 18 junior mentors, and 14 senior mentors), and volunteers (not including board members) was 45 (V. Zamora, personal communication, July 10, 2023). The Seattle chapter will be even bigger next year, with 16 new sophomores joining the organization this fall (V. Zamora, personal communication, July 10, 2023).

MMSEA ensures that fundraising goes directly to mentee programming, meaning they must also rely on donated space to host their Saturday sessions. Originally, they utilized spaces at Perkins Coie LLP, where one of the founding members was a long-time employee. Currently, the program uses designated classrooms at Seattle University, which are rented to MMSEA free of charge. (See Appendix A for photos of Seattle University and spaces used by MMSEA).

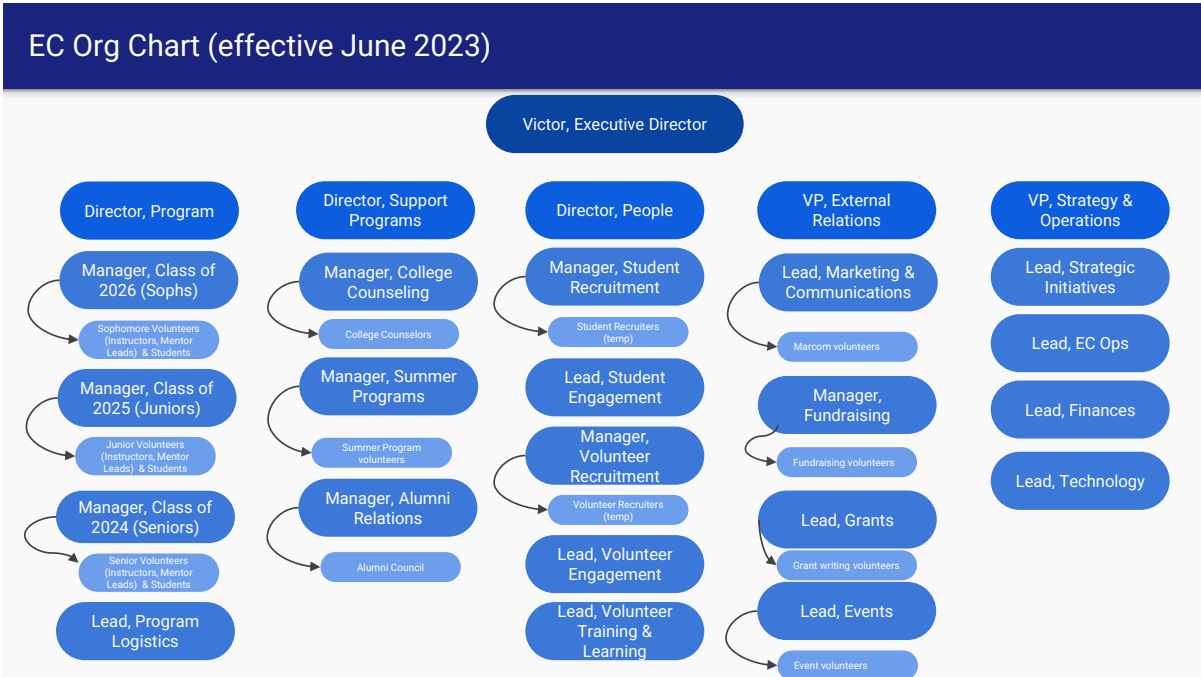
Additionally, budgeting did not support paid staff. As a result, volunteers, often with minimal experience in education, oversaw all areas of programming and management of MMSEA. With minimal support from MMN, the group's core volunteer members often spent innumerable hours preparing for their weekly Saturday sessions and handling various administrative duties critical to running the robust program. While their volunteers were competent and brought a variety of skillsets from their diverse professional and personal backgrounds, they were often overextended, juggling numerous roles within the organization in addition to daily jobs and other personal responsibilities.

To lower volunteer stress and improve overall programming, in May 2022, MMSEA

finally hired its first paid employee, Mr. Victor Jesus Zamora, as executive director of the Seattle chapter. As illustrated in Figure 1, the MMSEA Organizational Chart, Mr. Zamora now directs a volunteer group of three directors in charge of mentee and volunteer programming and management and two vice presidents who strictly handle administrative duties related to external relations and strategy and operations. In addition, there are multiple managers and leads working on specific tasks under each director and vice president's supervision. The chart uses arrows to indicate each manager's team. The large organizational chart allows for leadership distribution so that individuals have smaller spans of direct responsibility. While this approach may appear overly ambitious for a small-scale organization like MMSEA that only meets weekly, it is more practical for the organization as every individual fulfilling these roles volunteers and has obligations beyond MMSEA.

Figure 1

MMSEA Organizational Chart



Capstone Purpose

This capstone aimed to help MMSEA's Executive Director to better understand their program through research-based inquiry and analysis. As the new executive director, Mr. Zamora strives to offer active support vital to the chapter's sustainability and future growth. With MMSEA mentees (current and past), volunteers, executive committee members, and board directors as our key stakeholders, we gathered pertinent data that revealed the program's overall impact and areas for improvement. Relevant data included mentee and mentor experience and academic achievement (both during and post-program participation). Such data gave us insight into curriculum and program needs, volunteer recruitment and training, and differentiation from other college preparation programs for determined and driven high school students.

II. Problem of Practice

Mr. Zamora has extensive experience in education and student support. He is a former college admissions officer in multiple colleges and has also worked in education and educational non-profits (Zamora [LinkedIn], 2023), making him ideal for this role. Being a first-generation student, Mr. Zamora understands the complexity of the college admission process, especially for young adults from low-income backgrounds. He is eager to enhance MMSEA's programming, such as building stronger partnerships with local schools, improving tracking and analyses of mentee progress, and volunteer and executive committee member training that the organization had not previously targeted. While all that Mr. Zamora shared with our group was of great interest, our team of current and former educators, instructors, and curriculum specialists focused on Mr. Zamora's interest in understanding and measuring the "success" of MMSEA mentees due to participating in the three-year program.

MMN and MMSEA measure success by a mentee's acceptance to a college based on the institution's admissions competitiveness ranking (such as Barron's), the amount of financial aid

received, and the academic rigor of the institution. Academic rigor encompasses challenge, complexity, depth of learning experiences, high standards, intellectual engagement, critical thinking, and mastery of content and skills. MMSEA uses the same success metrics to evaluate the quality of its college preparatory programming. In doing so, MMSEA maintains 100% college enrollment for program participants and has received positive feedback from past mentees.

Nevertheless, there is a need for a clearer understanding of the program's purpose and impact beyond college enrollment. The definition of success and its alignment with MMSEA's stakeholders, including volunteers, organizers, and the Minds Matter National (MMN) organization, requires examination. Additionally, the effectiveness of MMSEA's programs in helping mentees achieve success needs assessment. These considerations led us to formulate key questions to determine the problem of practice: How does MMSEA, including mentees, mentors and stakeholders, view success? What constitutes success for MMSEA mentees? Does success equate to acceptance at a college of choice or is a mentee's persistence to graduation considered success? How does it differ among stakeholders? Furthermore, are the current programs effectively supporting mentees in achieving their goals? Addressing these questions will guide us in identifying potential programmatic changes that can better serve the needs of MMSEA participants.

Mr. Zamora is seeking clarity on the purpose and impact of the program after college admission. He envisions a movement beyond getting students into college to ensure success *through* and *after* college for MMSEA mentees. Using his vision of success, we focused on persistence, a characteristic critical not only to enrollment, but to the completion of college. Our problem of practice is working with the organization to develop recommendations to help them

achieve this goal.

III. Review of the Literature

Introduction

To conduct our literature review, we examined the importance of college completion, particularly for student populations served by MMSEA. Next, we reviewed persistence literature and the structures and psychological factors that drive individuals to persist toward challenging goals. We focused on college persistence to study the development of current thinking surrounding what it means for students to persist in college. Finally, we reviewed factors that lead students to persist towards graduation and common obstacles that derail persistence, especially for first-generation or minoritized students.

The Importance of College Completion

College education has become increasingly prevalent over the years, with college enrollment directly from high school rising from 63% in 2000 to 73% in 2016 (Britton et al., 2022). Given the significant financial benefits of college education, we expect to see this positive trend continue. College graduates earn almost 50% more per year than non-college graduates and have more job stability (U.S. Bureau of Labor Statistics, 2023). Annual data gathered through the U.S. Census Bureau and Bureau of Labor Statistics' Current Population Survey (IPUMS) confirms this finding, with the median income of high school graduates in January 2022 at \$34,320 while college graduates earn a medium of \$70,000 (Federal Reserve Bank of New York, 2023). (See Appendix B for expanded data, including differences in unemployment based on educational attainment between 1990 and 2022).

Despite the positive outcomes of a college degree, some have questioned the value of attending college. Caplan (2018) argued that much of higher education is not just wasteful but

harmful and that vocational education or on-the-job training may be better suited for many students. Similarly, Balliester and Elsheikhi (2018) suggested that there may be other ways to prepare for the workforce and that alternative education options, such as vocational training, apprenticeships, and online courses, may be more valuable. They noted that these alternatives benefit some students, particularly those uninterested in a bachelor's degree or those lacking the financial means to pay for college. However, they cautioned that these pathways could sometimes reinforce existing inequalities, such as tracking students into lower-paying jobs and perpetuating racial and gender disparities.

While some people doubt the effects of going to college, earning a college degree is linked with greater social and economic outcomes. Chetty et al. (2017) analyzed income mobility from U.S. colleges and found that access to colleges depended on parent income. However, future earnings outcomes were not based on socio-economic backgrounds when comparing students from the same universities. Institutional quality also correlated with economic mobility, as elite schools producing the highest rates of movement. They suggested that colleges could play a role in intergenerational mobility and called attention to colleges that drove upward movement the most.

While policymakers have focused on college access as a marker of success, more is needed to measure a complicated issue (Bettinger, 2015). A more meaningful measure is college graduation. Therefore, this literature review explores the role of persistence in college graduation, factors that produce persistence, and supports that increase students' likelihood of earning a degree. Despite the increasing enrollment numbers, maintaining persistence toward graduation has been challenging, with only 59.6% of students graduating within six years (Britton et al., 2022). This finding is particularly concerning for minoritized students who face

lower completion rates (Friedman & Mandel, 2009; McElrath & Martin, 2021). As such, there is a need to understand the drivers of persistence and how to support students in completing their degrees.

Conceptualization of Persistence

Persistence is often discussed within human motivation as it drives goal-oriented behavior. Peterson and Seligman (2004) define it as the “voluntary continuation of goal-directed action despite obstacles, difficulties, or discouragement” (pp. 229-230). Their definition focuses on the idea that persistence is not a function of time; in other words, it does not matter how long one takes to achieve one’s goal. It requires facing and overcoming challenges in pursuit of a specific goal. Challenges and obstacles are deleterious to motivation, stifling progress toward the desired goal. Persistence is behavior that maintains motivation towards goal achievement after overcoming obstacles (Pajares, 2002). *Persistence* is a “continuous process that arises from resisting the urge to quit” (Moshontz & Hoyle, 2021, p. 1). To persist, one needs an attainment goal.

History of College Persistence Literature

Tinto’s Interactionalist Model is a well-known and widely recognized theory of college persistence that emphasizes academic and social integration in determining year-to-year retention (Tinto, 1975). The model hypothesizes that students will continue their studies when they experience connectedness to their campus through interactions with college faculty, staff, and peers. Within this model, persistence in college refers to a student continuing at the same institution the following academic year.

Tinto proposed that academic and social integration lead to greater academic success. Academic integration is how students engage with their coursework and meet the requirements

for degree completion (Tinto, 1975). Social integration is the degree of belonging students feel on their campus (Tinto, 1993). The Interactionalist Model suggests that academic and social integration are interrelated. Students who struggle academically may isolate themselves socially, negatively impacting academic performance and persistence (Tinto, 1993). Students who lack social and academic support may find obstacles insurmountable.

Moreover, integration also explores the correlation between student expectations of college and reality. Students arrive at college with specific expectations of their college experience. Student persistence is affected by their expectations and perceptions of reality (Metz, 2004). If students feel they will do well in their classes or quickly make friends yet struggle to accomplish either, their ability to persist will decrease. This idea demonstrates the importance of Tinto's model for persistence both before and during college.

Tinto's model provides a framework that relies on academic and social development during college. However, his model has received criticism due to the underrepresentation of minoritized students in his models and because it does not consider the psychosocial aspects of the student (Metz, 2004; Robbins et al., 2004; Arnekrans, 2014). Tinto's definition of college persistence too narrowly emphasizes a traditional student's year-to-year progress within the same university. This conceptualization more closely relates to institutional retention, a goal of universities, while persistence is an individual goal toward graduation, regardless of the pathway (Reason, 2009). Understanding college persistence in this way allows for a broader study of environmental and personal factors that influence persistence toward graduation, regardless of whether they continue consecutively or at the same university. Goals, self-efficacy, and outcome expectations from attending a university impact the persistence of individual students (Lent et al., 1994). Additionally, college preparedness, the university environment, student race and

ethnicity, financial backgrounds, and support structures, especially the interaction of these together, play essential roles in student progress and students' ability to overcome obstacles (Robbins et al., 2004; Johnson, 2008; Gloria et al., 1999; Wright et al., 2013; Wei et al., 2011). Considering these many factors complicates the college persistence narrative and creates challenges for colleges to support persistence in students (Reason, 2009).

Factors That Affect Persistence

First-Generation College Status

First-generation college students (FGS) confront more obstacles than their peers because they lack the generational experience to provide support or expectations (Stewart et al., 2015). Ramos-Sánchez and Nichols (2007) showed that FGS had more significant academic challenges than peers, even when controlling self-efficacy levels. In addition to lacking generational experience, FGS typically intersects with other demographic and background characteristics associated with lower graduation rates from college (Garriot et al., 2017). Without prior examples of success and facing challenges while navigating complex university systems, the onset of an obstacle can significantly harm FGS experiences and make it less likely that they persist.

Racial and Ethnic Backgrounds

Minoritized students are also likely to face greater challenges and have stronger responses to them (Gloria et al., 1999). For example, challenges affect Black and Latinx students most, especially when attending primarily White institutions (Fischer, 2007). These students may struggle with belonging on campus, face discrimination from instructors and university staff, and feel greater pressure to perform well if they do not feel represented within the student body (Gloria et al., 1999; Wei et al., 2011). These factors add additional difficulties to college, which

impacts how students respond to adversity. Further challenges like these may reduce students' self-efficacy and affect their persistence.

College Preparedness

A primary predictor of college success is academic performance metrics prior to college, such as high school grades and entrance exams (Stewart et al., 2015). Stewart and colleagues (2015) found that students placed into remedial courses had worse outcomes than those who did not. While they did not find a gender variation, it did show a slightly significant difference in persistence based on ethnicity when controlling academic preparedness metrics like high school GPA and SAT scores. Students who must overcome more by starting further back are less likely to persist to college completion. Similarly, Friedman and Mandel (2009) found a statistically significant correlation between first-year college GPAs and high school performance metrics such as SAT scores and high school GPAs. They go further and examine students' academic expectations and goal setting prior to college. Their findings show that students with positive expectations of themselves demonstrated greater persistence. Coupled with solid academics in high school, expecting to be successful helps students manage challenges.

Strong academic performance before college equates to greater college-level preparedness, making encountering academic obstacles less likely (Friedman & Mandel, 2009). Students who face fewer obstacles persisted at higher rates. Additionally, students with strong prior performances have greater self-efficacy and belief in their ability to overcome academic obstacles (Lent et al., 1994; Nagaoka et al., 2013). They are more well-equipped to push through setbacks when they arise in the future. Such students will also likely have strong study skills that support their persistence through challenging material (Nagaoka et al., 2013). These factors support students' persistence and set students up for success in college.

University Environment and Support Structure

On an institutional level, the overall environment and available support services affect student persistence. Students attending schools that provide services such as first-year seminars and counseling have better grades and are more likely to return for their second year (Schnell & Doetkott, 2003). These services are essential for vulnerable populations such as FGS and minoritized students who often encounter more significant academic challenges (Garriott et al., 2017; Gloria et al., 1999). Larger campuses can also make students feel lost and isolated when challenges arise, as finding support and building relationships with faculty is harder (Fischer, 2007). This final factor that affects persistence supports Tinto's original model, which suggests that social connectedness improves levels of persistence.

IV. Conceptual Framing

Theoretical Framework: Social Cognitive Career Theory (SCCT)

Because MMSEA engaged with students before college matriculation, our work focused on college preparedness. Focusing on this pre-college phase required us to utilize a theoretical framework that considered prior outcomes and individual characteristics rather than being institution specific. This context and consideration lead us to the Social Cognitive Career Theory (SCCT) by Lent, Brown, and Hackett.

Social Cognitive Career Theory (1994) explains individual career development through career choices, career-related beliefs, and behaviors. According to SCCT, career development is a continuous process impacted by a person's cognitive and sociocultural factors, firsthand experiences, and environmental influences (Lent et al., 2000). It centers on the mutually reinforcing relationship between personal, contextual, and behavioral factors (Garriott et al., 2017). While the theory's original purpose focused on the entirety of the career development

process, its application to college persistence as a parallel process is prevalent in research (Garriott et al., 2017; Wright et al., 2013).

SCCT extends Bandura's Social Cognitive Theory (SCT) of motivation by framing the individual, contextual, and behavioral interactions within a career or academic developmental context. With SCT, Bandura focused on the triadic interaction between the individual, contextual, and behavioral aspects of motivation to show that people learn from their interactions with their environment (Bandura, 1986). SCT emphasizes the role of cognitive and sociocultural factors in shaping behavior and beliefs. The "interlocking mechanisms" within this process affect each other "bidirectionally," contributing to overall learning and motivation to learn (Bandura, 1986; Lent et al., 1994). In this way, personal factors both impact and are impacted by the environment within which the person engages in activities and the overt behaviors of that person within the given context.

According to Lent et al. (1994), SCCT proposes four factors that influence career development: personal factors (self-efficacy, outcome expectations, and personal goals), environmental factors (social support, barriers, and environmental culture), learning experiences, and personal performance attainment. As with Bandura's theory, these factors are mutually reinforcing and interact in ways that make it more or less likely that a person achieves the desired performance attainment levels.

Self-Efficacy

Self-efficacy is an individual's belief in their ability to accomplish a task or goal (Jacobs et al., 1984). Self-efficacy is an essential factor in Bandura's SCT (1977). It impacts persistence because higher self-efficacy produces greater beliefs that one can achieve one's goals, even when facing setbacks. Conversely, lower self-efficacy means the individual is more likely to give up

instead of confronting obstacles. Self-efficacy fluctuates depending on goal difficulty, prior experiences, and outcome expectations. While Jacobs and colleagues (1984) describe a direct correlation between high self-efficacy and persistence, significant setbacks reduce self-efficacy and lower future persistence (Zimmerman et al., 1992).

Self-efficacy is not a fixed quality; it is dynamic and influenced by mastery experiences, vicarious experiences, social persuasion, and physiological and emotional states (Bandura, 1997). Mastery experiences refer to how learners interpret their previous experiences. Successful task performance increases self-efficacy, while failure may do the opposite. Repeated successful experiences contribute to stronger self-efficacy (Bandura, 1997). Vicarious experiences are the learner's interpretations of others' experiences. Observing others, especially similar peers, or role models, successfully performing a task can increase an individual's self-efficacy. This latter point is increasingly crucial for FGS and minoritized students who attend predominantly White institutions (Garriott et al., 2017; Gloria et al., 1999). Seeing others succeed can create a belief that similar success is possible for oneself (Bandura, 1986). Social persuasion involves encouragement from others. Encouragement and positive feedback from others can enhance self-efficacy.

Conversely, discouragement and negative feedback can undermine it (Bandura, 1997). Physiological and emotional states are the positive or negative responses to a task. Positive emotional states and lower stress levels can increase self-efficacy, while negative emotions and high stress can decrease it. Individuals often interpret their emotional and physiological states as indicators of their abilities (Bandura, 1997).

Any discussion of persistence must include an examination of self-efficacy, due to the strong relationship between the two. Self-efficacy predicts career-related outcomes, such as

choice, satisfaction, and success (Lent et al., 2000). In SCCT, this idea refers to how individuals react to performance outcomes related to their graduation goals. Self-efficacy can make students more likely to persist even when they face failures or challenges compared to their desired goals (Robbins et al., 2004). As described by Bean and Eaton, “When individuals believe they are competent, they gain self-confidence and develop higher levels of persistence at and achievement of the task and develop higher goals for task achievement. We believe that as academic and social self-efficacy increase, academic and social integration also increase” (2001, p. 77).

Additionally, according to Zimmerman et al. (1992), students with higher self-efficacy demonstrate more effective learning strategies, better time management, and overcome more challenges in their academic pursuits. They also seek support when facing challenges, which develops a greater sense of belonging in the academic environment (Zimmerman et al., 1992). Again, this is especially crucial for FGS and minoritized students who may feel disconnected from their university. Without self-efficacy, students who face struggles may not attempt to overcome them alone or with support.

Outcome Expectations

Outcome expectations predict career-related outcomes, such as career choice and persistence (Lent et al., 2000). Observing the experiences of others, such as peers and family, can influence personal outcome expectations. Student experiences and support networks shape outcome expectations. For example, Mitchall and Jaegar (2018) found that parental encouragement and openness to supporting their children in college reinforced positive outcome expectations for enrolling in university, even if the students were FGS. They found that for FGS, family encouragement provided sufficient support to persist even though families did not have

prior knowledge of the college experience. Students who enter school with positive framing have greater persistence and higher self-efficacy than their peers (Friedman & Mandel, 2009).

Goal Setting

Setting goals helps individuals to direct their behavior, effort, and attention toward desired outcomes (Locke & Latham, 2002). Goals provide a target that informs tasks, choices, and behaviors that will move a person towards reaching their goal. Beyond targeting effort, goals serve as reference points for performance, and setting challenging goals affects motivation, which affects persistence (Heath et al., 1999). This idea means people persist toward goals to gain the reward of success and avoid the loss of failure. How one perceives their ability to meet a goal becomes important within persistence literature as this aspect affects the extent to which they will persist. Higher goals inspire stronger effort if the person believes they can achieve them (Locke & Latham, 2002).

SCCT emphasizes the importance of career-related goals and interests in shaping postsecondary outcomes. Students with clear career goals and interests are more likely to persist towards positive academic outcomes. (Lent et al., 1994). Goal setting can help students maintain motivation, monitor progress, and adjust their strategies to stay on track. SCCT also highlights feedback and learning experiences in shaping postsecondary outcomes. Students receiving feedback supporting their career goals and interests are more likely to persist and achieve positive outcomes (Lent et al., 1994). If students face obstacles or challenges, feedback and support related to their goals help them maintain their course.

Self-efficacy and outcome expectations also influence goals. Students with high self-efficacy and positive outcome expectations are more likely to set challenging goals (Brown et al., 2008). Challenging goals represent a risk, and a greater belief in self allows for greater risk-

taking towards more challenging work. Moreover, the human tendency towards loss aversion means that if individuals do not have high self-efficacy, they may set smaller goals to avoid the risk of failure (Heath et al., 1999). This concept may also affect current goals as students who face failure will alter their goals to match their current level of self-efficacy. To combat this, Heath, Larrick, and Wu (1999), referencing Bandura, suggest proximal goals as checkpoints that lead to a distal goal, such as college completion. For example, students could set a goal to earn a specific GPA in their first year or complete a challenging class to reach their ultimate graduation goal. These small wins develop greater self-efficacy and positive outcome expectations, influencing students' persistence when facing future challenges.

This relationship between self-efficacy, outcome expectations, and goal setting is mutually reinforcing. Persistence is grounded in the belief that effort will lead to more robust performances, leading to goal attainment (Friedman & Mandel, 2009). Students who believe they can complete a university degree and expect that completion to lead to positive outcomes are likely to persist when faced with challenges. Lent and colleagues assert this claim in their outlining of SCCT by stating that students with positive outcome expectations are more likely to persist and achieve positive outcomes (1994). Coupled with high self-efficacy, positive outcome expectations support students through their college experience.

Environmental and Personal Factors

SCCT emphasizes that both environmental and personal factors influence career development. Lent et al. (2000) found that social support and cultural factors can significantly influence career choice and development by shaping individuals' beliefs about what careers are appropriate for them. In the context of postsecondary education, family and peer support impacts academic persistence among students (Zavatkay, 2015).

Student dropout in postsecondary education involves both individual and contextual factors. Tinto's theoretical framework highlights social and institutional factors in shaping students' decisions to persist or drop out of college (1975). Other factors, like socioeconomic background and employment outlooks can also influence students' decisions (Dahling & Thompson, 2010).

Zavatkey (2015) found that students who receive emotional and academic support from family and friends demonstrate greater persistence, reducing adverse effects of stress. Tinto (1975) suggested that academic services can help students face academic challenges, increasing their chances of success. Counseling, career, and extracurricular activities also help students navigate challenges and develop connections to their campuses.

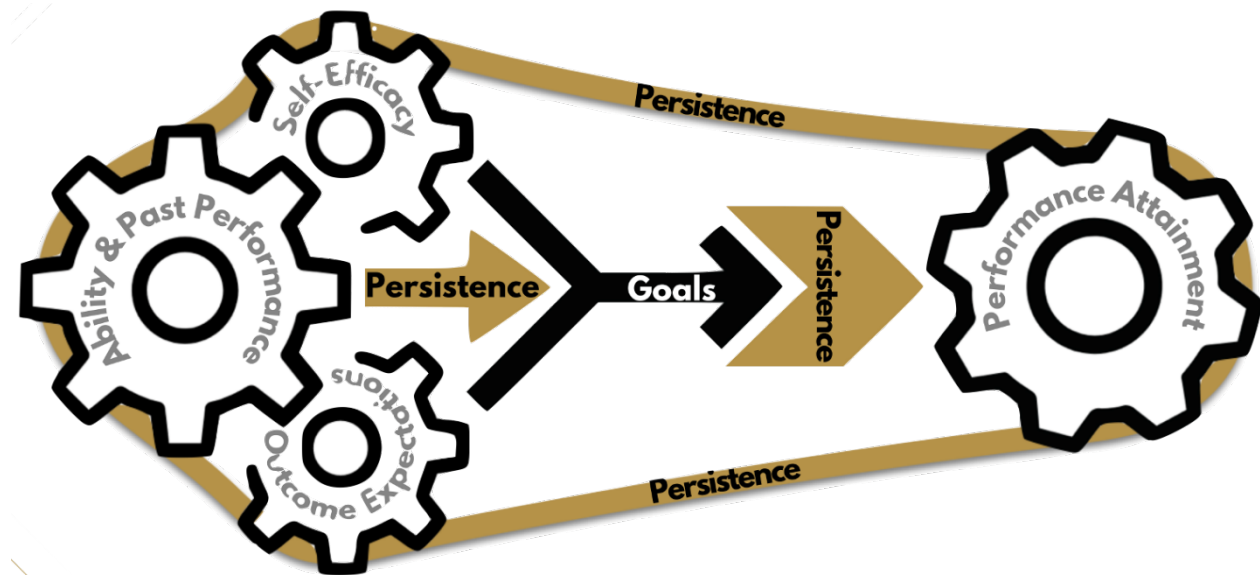
For this project, we will apply SCCT to postsecondary outcomes and college persistence. We will explore the interactions between personal factors like self-efficacy, outcome expectations, and performance goals to understand which factors affect persistence towards college graduation (Lent et al., 1994; Lent et al., 2000; Garriott et al., 2017; Wright et al., 2013). Additionally, we will consider the importance of persistence on these factors concerning past performances as students either progress or fail to persist toward graduation.

Conceptualization of Persistence

For our capstone, persistence is the ability of students to continue in their studies to complete their degree or program, even in the face of difficulties such as academic challenges, financial constraints, institutional challenges, or personal issues (Brown et al., 2008). We decided to pursue a more generalized definition of persistence that allows students to complete their degrees in non-consecutive years or through transfers. This definition aligns with Reason (2009), who differentiated persistence as an individual trait and retention as the institutional goal

of student continuity year-to-year. It also aligns more directly with MMN and MMSEA's goal of achieving 100% graduation from college for their mentees. So long as the student continues pursuing their bachelor's degree, we consider them to be persisting.

Persistent students stay enrolled, complete their coursework, and graduate with a degree or credential at higher rates (Robbins et al., 2004). In addition, persistence is often related to greater academic achievement, satisfaction with the educational experience, and better post-graduation employment opportunities (Lent et al., 1994). However, persistence is not an outcome of college success but a factor (Reason, 2009). Students do not strive *towards* persistence but rather *rely* on persistence while pursuing their goals. Thus, in our framework, persistence is a driver of and is driven by the individual, behavioral, and environmental factors toward college graduation. Like the gears portrayed in Figure 2, an individual's ability, and past performance, along with their outcome and expectations, are both impacted and propel their sense of self-efficacy, generating new goals that lead to performance attainment. At the same time, keeping these gears in place and maximizing their efficiency is the role of persistence, both as a belt that tightens the pieces together and a lubricant to keep their mechanism smooth.

Figure 2*Conceptual Framework*

In summary, SCCT can be applied to postsecondary outcomes to understand the complex interactions between the multitude of factors that influence individuals' postsecondary experiences and outcomes. By emphasizing self-efficacy, outcome expectations, support, career-related goals, interests, and learning experiences, SCCT can help educators, counselors, and policymakers to support students' postsecondary success.

As stated at the beginning of our literature review, college graduation should be the goal. MMSEA has successfully achieved college admissions for their mentees, but to build the impact of their missions, they should focus on ensuring their mentees graduate from college successfully. The students they serve require continued support once they begin the first semester of their college experience to manifest that success. While college admission should be celebrated as a major milestone, the ultimate measure of success is graduation. Therefore, we recommend that MMSEA develop its programming to facilitate this ultimate measure of mentee success.

V. Project Questions

Our project will answer the following questions:

1. How do MMSEA stakeholders understand persistence?
2. How does MMSEA foster persistence in mentees?
3. Given the answers to the first two questions, how should MMSEA set its short- and long-term organizational strategy to support persistence?

VI. Project Design

Our questions emerged from conversations with the Executive Director that focused on how students perform once they graduate from the program and progress through college. Through our literature review, we determined that we should examine how MMSEA fosters college persistence in their mentees during the three years within the program so that mentees would be successful in their four years of college and beyond. Given the importance of persistence in college success and the disparity of persistence between first-generation students (FGS) and non-FGS, we also wanted to know how persistence is understood within the organization. We designed our project using an asset-based approach, examining how MMSEA currently fosters college persistence in their mentees. We then looked for opportunities for growth to make our recommendations to MMSEA so that they can design their short- and long-term strategies to achieve their goal of 100% college graduation.

We used qualitative methods through survey dissemination and follow-up interviews via Zoom. Our focus was to better understand the experiences of MMSEA's mentees, both current enrollees and program graduates. We also sought to understand how their experiences related to college persistence.

Participation was non-randomized, and sampling was based on convenience and snowball

methods. To recruit graduated mentees, we initially enlisted Mr. Zamora to share a video message aimed at former MMSEA mentees to participate in our project. This approach only generated two responses, so we then followed up with targeted email and text messages from a team member with former connections to MMSEA to schedule individual appointments. For current mentees, a team member visited MMSEA at Seattle University's Pigott Building while students were in session and gave the survey to mentees by grade level. (See Appendix A for photos of the Pigott Building taken on the day of the visit by a team member.) Our initial survey collection identified individuals willing to be interviewed. Mentees volunteered for follow-up interviews within the survey by indicating they were interested and providing their contact information. During those interviews, additional mentees and a few mentors were recommended to include in our interviews. The mentees that were identified by peers and subsequently contacted by our team and agreed to be interviewed completed the survey after speaking with our team. The following section will discuss our data collection methods more in-depth, including survey and interview question design.

VII. Data Collection and Analysis Status Report

Data Collection

While reviewing the literature, we identified several scales with high reliability and validity that had been developed to measure SCCT factors. We drew our survey and interview questions from those tools. We also considered MMSEA's populations of interest and their potential interaction experience with several types of questions. After weighing this information, we tailored survey items and interview questions to an appropriate level and anticipated amount of completion time.

Parent Consent

Obtaining consent for minor mentees presented a challenge to access some participants. Permission was required by the mentees' parents or legal guardians before disseminating surveys and conducting interviews. We anticipated minor delays in gaining parental consent and took steps to facilitate this process. We also anticipated other barriers, including language differences, access to parental contact information, and Internet and technology access in the mentees' homes. To solve these concerns, we provided Mr. Zamora with printed copies of the parental consent form (see Appendix C), along with electronic copies and fillable, web-capable forms. Unfortunately, even with our extensive preparation, we ultimately experienced delays in obtaining parental and guardian consent using the forms. As a result, we opted to accept any form of approval we could document, such as email, text, or verbal authorization by the parent via Zoom. This combined approach allowed us to receive consent more readily while progressing in our interviews with mentees younger than eighteen.

Surveys

We constructed our survey by combining Schwarzer and Jerusalem's General Self-Efficacy Scale (GSES, 1995, p. 37) with a revised version of McWhirter's 1997 Perception of Barriers Scale recreated by McWhirter (POB, Luzzo & McWhirter, 2001, p. 65). The survey questions were organized by the six key factors identified in the conceptual framework: ability and past performance, self-efficacy, outcome expectations, goals, performance attainment, and persistence. In addition, we included a demographic questionnaire to capture this information on mentees. Finally, we included an open-ended prompt for participants to explain the meaning of "persistence" based on their understanding and experience. (See Appendix D for the survey questions.)

On Saturday, March 25th, a team member visited the organization at Seattle University's Pigott Building to explain the project's purpose to current mentees. Mentees received designated time during their morning session to complete the survey. For mentee graduates, we created a short video for Mr. Zamora to share through MMSEA's social media account to recruit and increase survey participants. This approach yielded responses from two program graduates, and after viewing the low response rate, we changed our approach to direct recruitment, which entailed emails, text messages, and phone calls from our team and Mr. Zamora. This approach was successful and resulted in ten (10) graduated mentee interviews. While this altered our plan, we felt justified in this decision. Although this approach resulted in collecting interview data before the survey, we requested each graduated mentee to complete the survey post-interview. We acknowledged that reversing the collection may have altered survey responses.

Interviews

In addition to surveys, we designed interviews based on the measurement tools identified in the literature review. Our conceptual framework shows how self-efficacy, ability, past performance, and outcome expectations work together to propel an individual forward to achieve their goals, in this case, a college graduation. We were particularly interested in understanding mentees' perceptions of persistence and to what degree their self-efficacy played a role. We were also curious about MMSEA's influences, including within mentor relationships, on their attitudes and behaviors surrounding the meaning of persistence.

We structured our interview questions to learn about each interviewed mentee's experience during their three years at MMSEA and after leaving MMSEA. (See Appendix F for the interview questions.) Table 1 shows sample interview questions and their alignment with our framework.

Table 1*The Alignment of Sample Interview Questions to the Conceptual Framework*

Interview Questions	Conceptual Framework
1. Did/Do you feel prepared for the academic work of college? a. What did you find particularly challenging? b. What is/was easier than expected?	Ability and Past Performance Self-Efficacy Outcome Expectations
2. When you were at MMSEA, how often did you talk about goals regarding college and after college graduation? a. How often did your mentor help you set goals? b. How often did they help you make progress towards those goals?	Goals
3. How has MMSEA influenced your approach to overcoming obstacles in your academic or personal life? 4. How has MMSEA impacted your sense of confidence and self-efficacy when it comes to achieving your goals?	Self-Efficacy Outcome Expectations Goals

We conducted interviews via Zoom. One team member conducted the interview. At least one other team member attended the interview and took notes. During the interviews, only the team member conducting the interview remained on camera to reduce distractions for the interviewee during their conversation. We felt it necessary to engage as many team members as possible during each interview to serve as observers and note-takers to address any questions of potential bias or influence of an interviewer. Following the interviews, we retained the interview video, audio, and transcript for analysis.

To promote consistency, we utilized a standard interview protocol. (See Appendix E for

the interview protocol.) Additionally, to ensure that each mentee would share their stories as organically as possible, we did not alert mentees directly to the purpose of each question as it relates to the SCCT. Other note-taking and observational forms were also incorporated to supplement the prepared interview questions.

Program Data and Documents

To further triangulate our data, we requested program documents from Mr. Zamora. These documents provided further insights into the information provided from the mentee interviews and survey data. Particularly, these documents provided data to help us answer our second research question about how MMSEA currently fosters persistence in mentees. We reviewed items surrounding mentee academic history, admissions criteria, curriculum, mentor recruitment and selection, orientation, and training, family engagement, communication policies, social activities, and additional supports. Table 2 demonstrates connections between the requested documents and our conceptual framework. The documents listed provided additional information about how MMSEA's current approach builds mentee self-efficacy, outcome expectations, ability and past performance, and goals.

Table 2

The Alignment of Requested Organizational Documents and the Conceptual Framework

CF Alignment	Requested Document
Self-Efficacy	<ul style="list-style-type: none"> • Admissions and attendance policies • Curricular Content • Policy Documents • Mental Health Training • Non-structured Social Activities
Outcome Expectations	<ul style="list-style-type: none"> • Mentee and Mentor Orientation • Mentor Training and Policies • Parent/Family Engagement • Mentee-Mentor Assignment Policies • Program Communications • Graduated Mentee Involvement Structures
Ability and Past Performance	<ul style="list-style-type: none"> • Mentee High School GPA • Curricular Content
Goals	<ul style="list-style-type: none"> • Mentor Interview, Selection, and Partnering

The documents outlined in red represent items we requested, but MMSEA did not have them codified in their policies. There was no evidence that mental health services were provided by MMSEA or that mentors and staff received training surrounding mental health for mentees. There was also no evidence that MMSEA provides unstructured social time to support relationships within mentee cohorts. Saturday sessions are reserved for academic and college preparatory activities. Additionally, there was little evidence of structured interaction between current and graduated mentees to support cross-cohort support and further mentorship.

Anticipated Data Collection Alignment

We also addressed concerns regarding the confidentiality of interviewees, particularly with the previous social interactions and closeness amongst the graduates, mentors, and other adults. During interviews, it was common for mentees to identify siblings as current MMSEA mentees. We used this identification to find additional interviewees from the current mentee

population but only pursued if the current mentee designated interest in partaking in a follow-up interview. These measures were designed to facilitate the accuracy and trustworthiness of the answers to our project questions.

Data Analysis

Our data analysis process employed a two-fold approach, including inductive qualitative coding of interviews and quantitative analysis of the surveys.

Inductive and Deductive Combined Qualitative Coding

To analyze the interview data, we chose to employ a hybrid coding method that combines both inductive, bottom-up, and deductive, top-down methods, as outlined by Xu and Zammit (2020). Given the complexity of the interview data and the robustness of our conceptual framework, it made sense to review each interview for specific thematic elements to identify the most prominent aspects of each participant's story.

We randomly assigned five interviews to each of our four team members to review. This sampling created randomized pairs for each interview so that team members could calibrate across different data sets. Moreover, we ensured every team member had a distinct set of five interviews to reduce bias in the initial coding process. Our four team members reviewed the assigned interview transcripts and video to determine significant themes in each participant's responses. During the coding process, the team members identified and tracked recurring themes that surfaced consistently across the interviews. These themes were derived directly from the data, enabling a comprehensive understanding of the participants' experiences and perspectives. Themes were named, color-coded, and counted to determine the presence and the number of times mentioned throughout the interview. Table 3 is an excerpt from an individual researcher's

coded spreadsheet from “Lucy’s” interview. Table 4 illustrates the corresponding table tracking the themes and frequency of responses from “Lucy’s” interview.

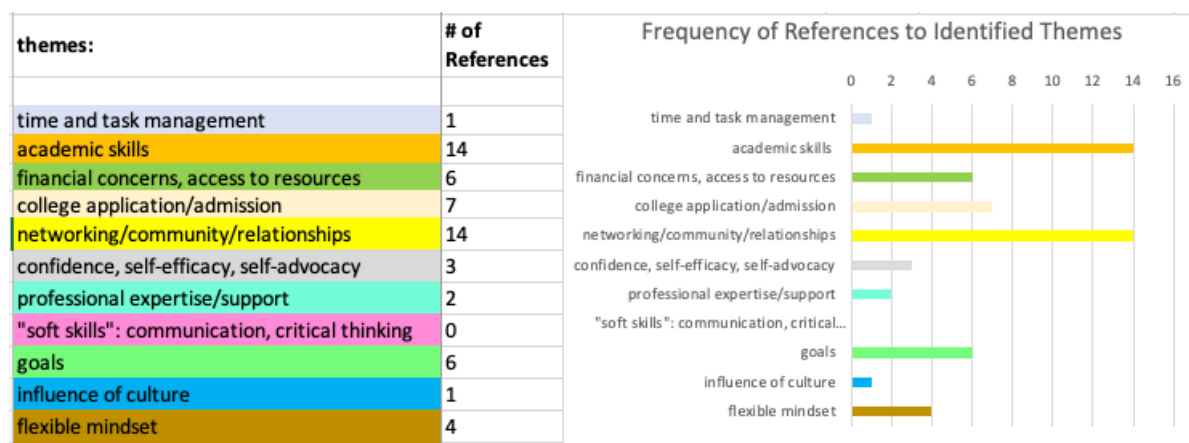
Table 3

Excerpt of “Lucy’s” Coded Spreadsheet

Question Topic	Line(s)	Response	Line(s)	Response	Line(s)	Response	Line(s)	Response
Mentor Relationships	655-656	still in touch with ██████	656-657	had positive experiences with all mentors	663-665	mentors helped with writing	665-668	██████ helped with college application process
Goals	717	spoke with mentors and ██████ about goals	724-726	came into MMSEA with identified goals, but goals changed regarding which college to attend.	730-731	██████ and ██████ were the people she spoke with throughout the college application process	733-735	college choices were made based on financial aid
Persistence	765-767	"It's being able to understand that things don't go as planned pretty much a 100% of the time" (764-765)	768	learned a flexible mindset from MMSEA	771-772	switching colleges exmple of adapting to a situation and making the most of it.	802	goal hasn't changed but the path isn't straightforward
MMSEA Impact/Overcoming Obstacles								
MMSEA Confidence/Self-efficacy	831-832	socially	832-833	writing for college applications	835-836	develop fluid mindset	837-838	helped determine an interested in ██████ but didn't help with study skills or academics
Cohort Peers	853-856	██████ went through college decision making proess together	864-865	██████ played the biggest rol in life goals, trajectory, college choices	867-868	██████ was a role model and peer mentor, 904-905	874, 887, 893-899	Other coherts that she's still in contact with include ██████

Table 4

Identified Themes and Frequency of Themes from “Lucy’s” Interview



Following the individual coding of interviews, our team convened to discuss the alignment of our initial themes. We identified recurrent and overlapping themes and sorted them

into three main categories: access to resources, social/emotional factors, and skill development.

Table 5 identifies the themes and their assigned categories.

Table 5

Codebook Categories and Themes Derived from Interview Qualitative Analysis

Category	Access to Resources	Social Emotional Factors	Skills Development
Themes	Tangible (housing, transportation, supplies) <ul style="list-style-type: none"> • Financial concerns 	Relationships <ul style="list-style-type: none"> • Personal Relationships • Family Influence • Professional/interest-based Networking 	Academic <ul style="list-style-type: none"> • Writing • Math/Science • Study Habits • Test-Taking • Presentations/Debate/Public Speaking
	Expertise <ul style="list-style-type: none"> • Mentors • College application process • Financial matters (scholarships, financial aid) 	Self-Concept <ul style="list-style-type: none"> • Social Identity <ul style="list-style-type: none"> ◦ Belonging • Self-Assurance <ul style="list-style-type: none"> ◦ Confidence ◦ Self-Advocacy • Imposter Syndrome 	Professional <ul style="list-style-type: none"> • Critical Thinking • Time and Task Management • Getting Support • Communication
	Opportunities <ul style="list-style-type: none"> • Summer programs • Test preparation • Tutoring 	Mental Health	
		Growth Mindset	

Determining Thematic Labels. Our coding process involved developing conceptual definitions and categories to identify and align themes within the data. In the case of relationships, we identified this topic two-hundred and twenty-two (222) times and further broke it down into sub-themes: personal relationships, family influence, and networking. Personal relationships encompassed the internal communities within MMSEA, as well as relationships with family members, peers, teachers, and coaches. For example, we coded Mariam’s account of her experiences with both supportive and unsupportive teachers as “personal relationships.” She highlighted the impact of teachers on students, stating, “Teachers either make or break a student”

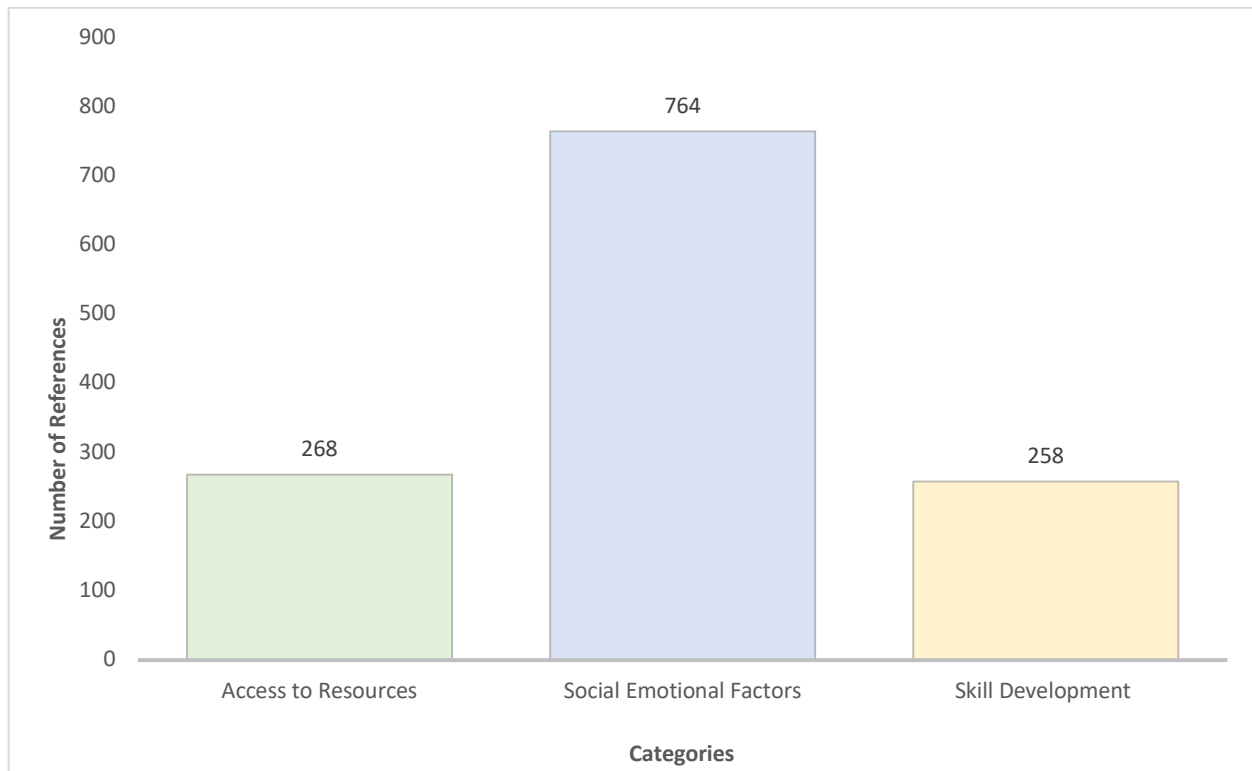
(Mariam, personal communication, April 19, 2023). She had positive experiences with her English Language Learner classes when she first arrived in the United States, recalling the encouragement she received. However, Mariam found some of the professors in college unapproachable and unkind, which led to struggles in her classes and eventually a decision to switch majors and leave the college (personal communication, April 19, 2023). Conversely, we categorized her father's influence as a "family influence" code. She described his influence on her career choice. "My dad...he was disappointed that I'm not going to become a doctor because he really wanted to become a doctor. He is the main reason why I actually...the first (to choose that) career, in the first place. He was disappointed and didn't believe that actually I would do it" (Mariam, personal communication, April 19, 2023).

To ensure clarity and consistency in our coding, we developed conceptual definitions for each theme, as detailed in the codebook provided in Appendix H. We defined personal relationships as "connections and interactions between individuals, such as the mentees and their families, friends, mentors, teachers, coaches." When assigning the "family influence" code, we considered the impact of family dynamics, values, beliefs, attitudes, and behaviors on an individual's development, choices, and well-being. We also considered the roles of cultural traditions, socioeconomic background, education experiences and expectations, and parenting styles in shaping family dynamics.

After defining and aligning our themes, we each returned to our coded transcripts and recorded them using the identified themes and categories. Figure 3 is a bar chart illustrating the total number of references per category. The graduated mentees referenced social-emotional factors more frequently than they referenced either access to resources or skill development.

Figure 3

Number of References to Category by Interviewee



We returned to the literature to explore the connections between our identified themes and SCCT factors on persistence. We employed a systematic approach to identify studies that examined the relationship between the themes we identified (access to resources, social/emotional factors, and skill development) and the SCCT factors (ability and past performance, self-efficacy, outcome expectations, goals, and attainment of goals). We included our codebook for reference in Appendix H. It summarizes the categories, themes, conceptual definitions for each theme, examples from the interviews, and literature that explains the connection between each theme and the SCCT factors.

The insights gained from the literature indicated that each of the themes identified in the interviews plays a significant role in fostering persistence for the MMSEA graduates. The narratives shared by the graduated mentees vividly illustrated how they utilized the skills acquired both at MMSEA and independently outside of MMSEA to surpass social and academic hurdles and persist in their college journeys. They also demonstrated the complex and overlapping nature of the SCCT factors.

Social Emotional Factors

Of these themes, social-emotional factors far outweighed the other two as demonstrated in Table 6. The themes in this category are relationships (including personal relationships, the influence of family, and networking), culture and diversity, mental health, and growth mindset. Furthermore, we observed themes related to self-concept, such as social identity, belonging, self-assurance, and imposter syndrome. Table 6 provides the frequency of references to the themes categorized as social-emotional factors.

Table 6*The Frequency of References to Social-Emotional Themes*

Category/Themes	# of References
Social Emotional Factors	764 Total
Relationships	70
· Personal Relationships	38
· Family Influence	59
· Networking	55
Influence of Culture and Diversity	20
Self-Concept	5
· Social Identity	50
o Belonging	40
· Self-Assurance	97
o Confidence	81
o Self-Advocacy	40
· Imposter Syndrome	52
Mental Health	99
Growth Mindset	58

Access to Resources

We operationalized “access to resources” as the availability and utilization of tangible and intangible supports, opportunities, and assets that individuals can leverage to enhance their academic success. During the interviews, several themes emerged, including financial concerns, access to mentorship and expertise, and opportunities such as summer programs and test preparation classes. As shown in Table 7, financial concerns were mentioned most frequently.

Table 7

The Frequency of References to Access to Resources Themes

Category/Themes	# of References
Access to Resources	268 Total
Tangible (housing, transportation, supplies)	33
· Financial concerns	63
Expertise	32
· Mentors	25
o College application process	34
o Financial matters (scholarships, financial aid)	21
Opportunities	23
· Summer programs	34
· Test preparation	3

Skill Development

Finally, skill development was a recurring theme that mentees attributed to their experience at MMSEA. Specifically, they discussed academic and professional skills that they utilized throughout their college experience and into their careers. Table 8 shows the development of skills that were mentioned most frequently.

Table 8*The Frequency of References to Skill Development Themes*

Skill Development	258 Total
Academic	68
· Writing	19
· Math/Science	11
· Study Habits	14
· Test-Taking	3
· Presentations/Debate/Public Speaking	14
Professional	37
· Critical Thinking	6
· Time and Task Management	32
· Getting Support	41
· Communication	13

Individual Researcher's Factors Impacting Coding

As discussed above, each researcher developed their own coding themes during their initial transcript reviews. After alignment with the above themes, each researcher returned to their transcripts to adjust their codes to the new themes. During this process, it is important to note the subjectivity and individual biases that could affect the coding process. Ann, our lead researcher, is personally connected to MMSEA through her long-term involvement. She also has a personal connection to all the graduate interviewees who participated in MMSEA while she was a volunteer there. This personal connection may have impacted her coding, resulting in more occurrences of each theme in her transcripts as compared to the other three researchers.

Survey Analysis

We administered our survey to both graduated and current mentees. We received 35 responses, and of those, 28 students completed the entire survey. Of the 28 respondents, 61% were sophomores or juniors (see Figure 4). Out of the total complete responses, 21 were from current mentees, representing 71% of all current mentees. The majority of all respondents

identified as female (61%) (see Figure 5), and more than half identified as Asian (56%) (see Figure 6).

Figure 4

Number of Survey Respondents by Graduation Year

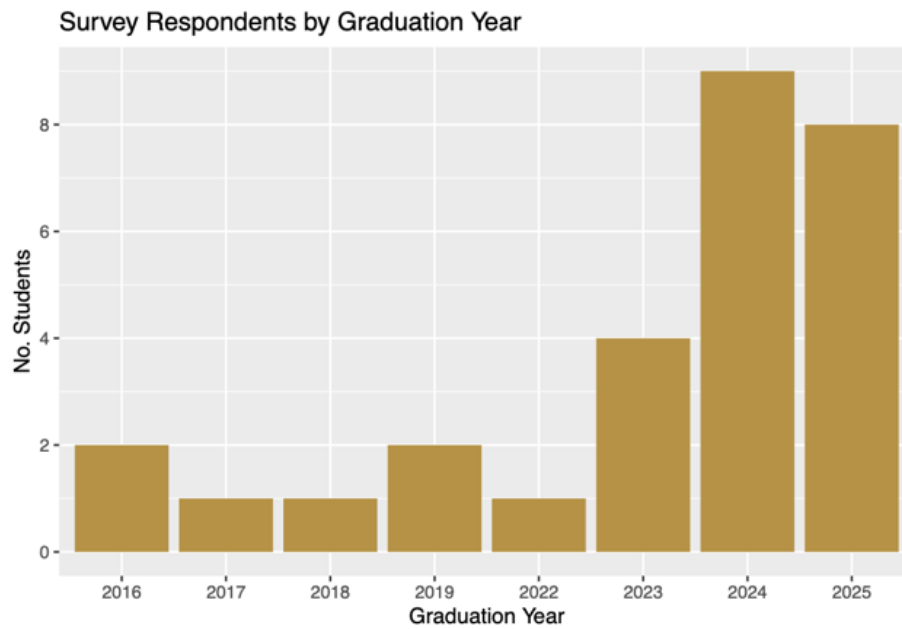


Figure 5

Number of Survey Respondents by Gender Identity

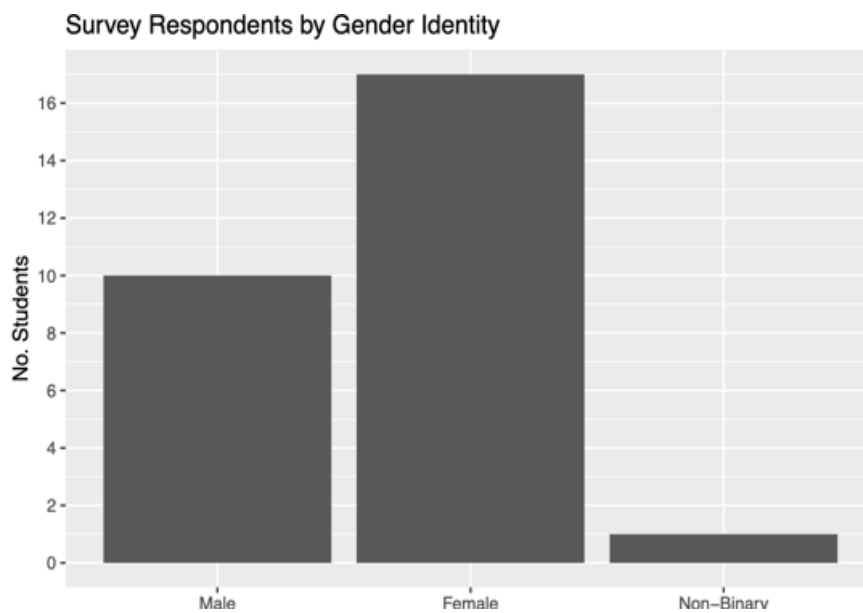
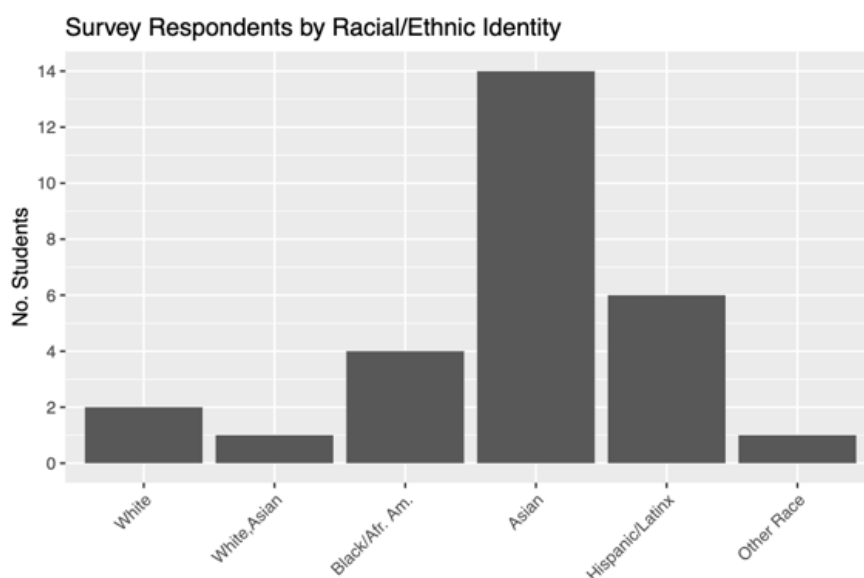


Figure 6

Number of Survey Respondents by Racial/Ethnic Identity



For the survey, we separated responses by current mentees and graduated mentees. We reviewed the General Self-Efficacy Survey as outlined in the tool created by Schwarzer and Jerusalem (1995). We utilized this tool to inform and yield mentee data related to self-efficacy, which is a crucial aspect of our conceptual framework. We summed the ten items for each respondent to find their general self-efficacy score (GSES), with fifty (50) being the maximum possible value. This score is a validated measure of self-efficacy that is correlated to positive emotions and outlook regarding work. Self-efficacy is a crucial driver of persistence within the SCCT framework, and the GSES provides insight into students' current levels.

To analyze the data, we then reviewed the mean and overall distribution of GSES disaggregated by grade level to determine if scores differed between mentee classes. It was not possible to determine if observed differences were statistically significant as the total number of respondents in each group was fewer than required for inferential statistics. Table 9 shows the mean GSES for current mentees by their projected graduation year.

Table 9*General Self-Efficacy Survey by Graduation Year*

Current Mentees

Graduation Year	Avg. GSES
2023	45.00
2024	41.89
2025	39.38

Additionally, we reviewed the response distributions of each item by summarizing the quartiles. As with the GSES, we disaggregated these responses by grade to determine response pattern differences across the different mentee classes. Finally, we reviewed each item's mean and standard deviation to understand the response distribution better and to highlight specific aspects of self-efficacy and outcome expectations that appeared stronger than others. We completed this process for both the current and graduated mentees. The tables in Appendix I show the mean and standard deviations for current and graduated mentees.

For the final two questions (“What does the word ‘persistence’ mean?” [question 12] and “Is persistence important to you? Why or why not?” [question 13]), we looked for themes and patterns in respondents' definitions of persistence and their examples to determine how aligned mentees are, both current and graduated, in their ideas of persistence. This process provided valuable data to inform our findings for our first research question regarding MMSEA's organizational understanding of persistence.

The definition of persistence amongst current mentees was relatively universal. Of the eighteen (18) survey responses, phrases such as “to continue” and “keep going” were most common and appeared in sixteen (16) definitions, reflecting how most of these young people know that persistence is not short-term but requires a significant time commitment. Similarly, sixteen (16) respondents coupled persistence with “difficulty” and “challenges” that twelve (12)

mentees identified as requiring hard work and “trying (their) best.” Interestingly, only ten (10) mentees identified persistence as a means to achieve a goal or desired outcome with eight (8) mentees also understanding the negativity or disappointment that comes with being persistent. However, when asked whether persistence is important or not, *all* respondents answered “yes” and included more details that aligned with one’s ability and past performance (e.g., “in the future, I need to know not to procrastinate as much...because I can fall behind”), self-efficacy (e.g., “it shows that I am capable of anything”), goals (e.g., “it’s what’s gonna help me achieve my goals”), and performance attainment (e.g., “allows you to have breakthroughs in whatever you are learning or solving”). (See Appendix J for the survey responses to two questions and keywords identifying themes.)

As for the graduated mentees, since eight (8) out of ten (10) individuals did not complete the survey before their interview, we asked them to define “persistence” during their interview. Unlike the surveys that required a written response, interviewees gave more detailed answers that incorporated specific instances of personal persistence. Like current mentees, all graduated mentees acknowledged the crucial nature of persistence in goals and personal attainment. Unlike younger current mentees, the graduated mentees had a more “realistic” view of persistence and a more personal understanding defined by *their* terms and experiences. For example, Nicole explained that persistence contributed to discovering her current career path in public health rather than medicine, which was her only passion throughout high school and a good part of college. Kata referenced persistence as the root cause of her academic anxiety *and* the ultimate catalyst that encouraged her to reach out to peers and other support to prevent her from failing a class. Such unique perspectives of persistence by the graduated mentees prove how persistence grows with time *and* evolves according to the experience specifically tied to each individual and

their circumstances.

Thus, by employing both qualitative and quantitative analysis techniques, we provided a comprehensive data analysis that generated valuable insights for our research questions and contributed to a deeper understanding of the subject matter.

VIII. Findings

After analyzing our surveys, interviews, and document analysis, multiple findings about our project questions emerged. Our data provided insight into mentees' thoughts about self-efficacy, outcome expectations, and persistence. It also demonstrated how MMSEA's focus on college admissions is reflected in their approach and mentees' experiences. Through our interview coding and survey data, we saw the effects of social-emotional influences in every aspect of their lives. We also saw key areas where MMSEA could implement changes that would lead to developing greater college persistence factors aligned with SCCT.

This section focuses on four findings categories and our associated recommendations to address them.

- First, mentors are essential to the MMSEA's program, but not all mentees experience their mentor relationships equally. Additionally, quality mentorship would benefit mentees once they enter college, as those who maintain informal relationships continue to utilize that resource.
- Second, mentees struggle with mental health during their time at MMSEA and once in college. MMSEA has opportunities to address mental health needs while mentees attend the program, including providing resources to support mental health once in college.
- Third, mentees expressed greater need for social connections with their program cohorts. Building social connections among mentees provides additional resources and support

systems that are crucial to college success. Furthermore, formal engagement with graduated mentees can help inform and assist students as they plan for and transfer to college.

- Fourth, students need guidance once they leave the program for college. Students need help navigating college campus resources to ease the transition from MMSEA.

We expanded on each of these findings, below. In the next section, we provided evidence-based tools or strategies as recommendations.

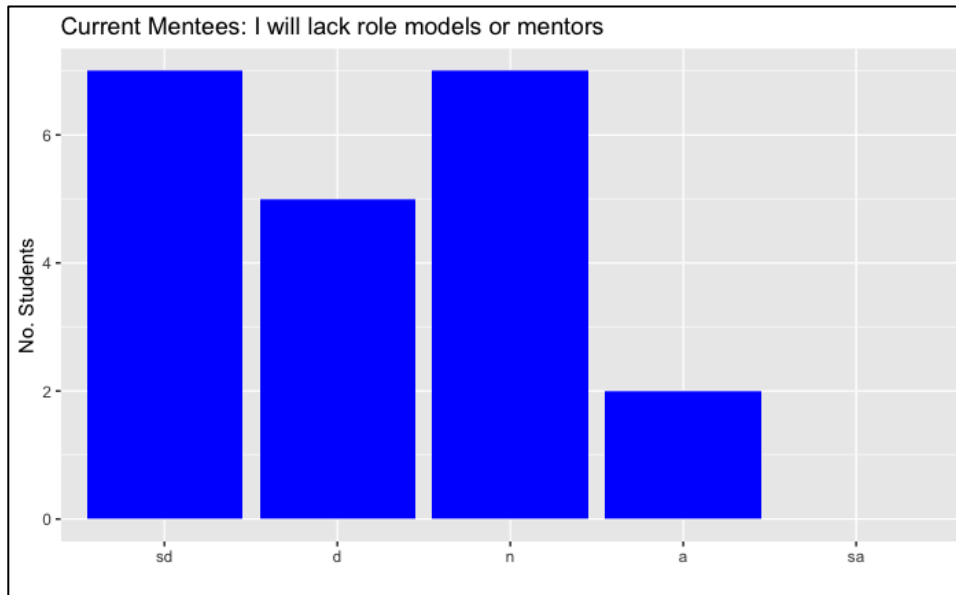
Finding 1: Mentors play a central role in guiding mentees through the program, but mentees' experiences were mentor-dependent and varied dramatically

The mentorships offered by MMSEA are highly impactful as mentors play a crucial role in guiding mentees through the program by sharing their personal and professional experiences. Mentors serve as primary resources for supporting mentees' understanding of themselves. They also serve as advisors and networking resources, helping mentees develop goals and shape expectations of college. Kata, a graduated mentee, said that her mentors helped her feel more confident in her college applications, and Elyse, another graduated mentee, spoke about visiting her mentor's place of work in marketing as influential in what she wanted to study. These consistent positive relationships often lasted beyond MMSEA, as mentees stated that they remained in contact with at least one of their mentors after graduation.

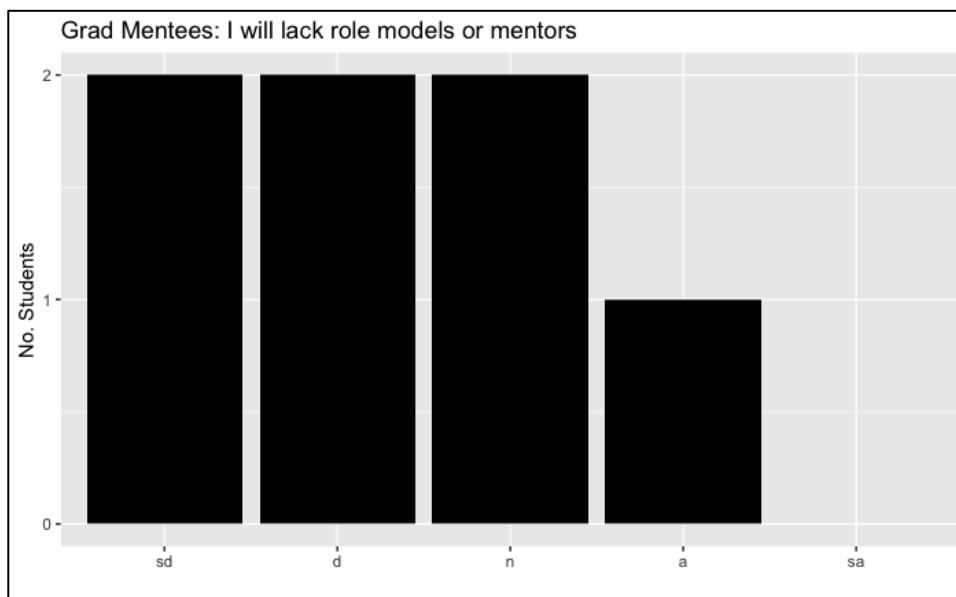
Our survey data also demonstrates mentors' impact as a trusted resource for mentees. We asked mentees how much they agreed or disagreed with the statement, "I will lack role models or mentors in college" (see Figures 7 and 8). More than half of current and graduated mentees disagreed or strongly disagreed with that statement (57% of current and 57% of graduated mentees), suggesting that mentees expect their mentor relationships to continue into college.

Figure 7

Current Mentees' Responses to the Statement, "I will lack role models or mentors."

**Figure 8**

Graduated Mentees Responses to the Statement, "I will lack role models or mentors."



However, mentees' experiences with their mentors varied as informed by our interviews. For example, mentors are expected to fulfill a three-year commitment to the same mentee, but

many mentees spoke about changing mentors each year. Additionally, communication during and after the program was inconsistent. Some mentors maintained frequent contact with their mentees, while others spoke much less often. These experiences affected the relationship between them as some mentees felt they could continue to use their mentors as support even in college, and others quickly lost contact.

Graduated mentees provided additional insight surrounding their mentors' effectiveness, and while most experiences were framed positively, others discussed the negative impacts of mentor attrition and behavior. Mentors' early departure was perceived by some mentees as a lack of commitment. These expressions of negative experiences with mentors and questions about their motivations were discovered during our interviews. One mentee graduate stated, "I felt like there were just some adults who were just performative. Like, why are you here? Just to get something on your resume? Or you're helping the students" (Felix, personal communication, April 17, 2023). He further went on to say, "If the intent is not there, the intent is not there" [meaning motivation to help the students] (Felix, personal communication, April 17, 2023). In addition to speaking about mentors departing early from the program, Felix based his questions surrounding the mentors' motivation on his observations during Saturday morning sessions. He asked, "Are you here to help or are you here to socialize" (Felix, personal communication, April 17, 2023)? In his final recommendation to mentors, he stated, "If you're gonna be a volunteer, then commit" (Felix, personal communication, April 17, 2023).

After hearing interviewees' concerns about mentor commitment, we asked Mr. Zamora, "What is the ultimate determinate for their [mentor] selection?" Mr. Zamora replied, "In the past, we honestly took most folks that could make the year-long or three-year commitment and displayed an understanding of working with [underserved] youth. This year the team created a

rubric that you will see in the attached document” (V. Zamora, personal communication, June 15, 2023). In reviewing the interviews and receiving this additional information from Mr. Zamora, both perspectives show concern with vetting prospective mentors for availability and commitment to the program, and the duration of their assigned mentees’ tenure.

How mentors interacted with their mentees varied as well. While many served as guides and advisors, some mentors pushed decisions on their mentees, causing additional stress. For example, Felix spoke about feeling “brainwashed” to attend certain “prestigious liberal arts colleges” (Felix, personal communication, April 17, 2023). Karin’s mentors told her they had high expectations and set deadlines much earlier than other mentees. Looking back, although Karin appreciates their consistent efforts to “get her into an Ivy League or Stanford,” she described their relationship as “really turbulent” and “not fun,” primarily from experiencing both stress and admiration towards her two mentors (Karin, personal communication, May 2, 2023). Others, such as Mariam, Alex, and Kata, felt supported to explore their goals and find the best path to achieve them. The discrepancy in mentor relationship quality affected how mentees viewed this experience and how they utilized their mentors as resources in the college journey.

From this finding, we reviewed the MMSEA Volunteer Handbook (VH), which contains valuable advice and resources for new mentors, including detailed expectations of time commitments, behavior, and acceptable interactions with mentees. In addition to the VH, we also received the MMSEA Orientation presentation and the Student/Volunteer Communication Policy. While all these resources are helpful, they did not provide a clear picture of the onboarding process and training for mentors.

The VH lists “Onboarding Materials” as “Coming soon” (Minds Matter Seattle [MMSEA], 2023b). Pam, a former mentor, cited a lack of a formal onboarding process in her

interview, stating, “So, I missed the orientation. I do remember that. So, I don’t know, my onboarding was just like, okay, here we are” (Pam, personal communication, May 11, 2023). She further went on to say, “...it was kind of interesting because I did miss, you know, the fundamentals, but it seemed to work out anyway” (Pam, personal communication, May 11, 2023). This mentor discussed her employment in the restaurant industry, specifically “front-of-house” roles, and her ability to engage in conversation with others. She stated, “I’m trained to talk to anybody” (Pam, personal communication, May 11, 2023).

This unstructured approach to onboarding likely leads to our observed variation in mentor relationship quality as mentors rely on outside training and experiences to fulfill their roles with MMSEA. The effects of the predetermined ability for mentors to connect with mentees were discussed in the literature. Mentors’ “self-efficacy” when mentoring youth is “associated with higher-quality relationships” (Karcher et al., 2005, as cited in Kanchewa et al., 2017, p. 11). It also leads to differing expectations for mentors about their duties toward their mentees, which results in inconsistent communication and approaches to mentorship. Our recommendations address these issues in the following section.

Finding 2: Many students struggled with mental health issues during and after the program, especially related to stress and anxiety

Students expressed feelings of anxiety, stress, and imposter syndrome as they worked through the program. During interviews, students expressed feelings of stress based on the demands from competing school, family, and MMSEA responsibilities. Mentees described feeling “burnt out” at different points during the program. Felix described the feeling, “I was severely burned out like I was honestly really depressed” (Felix, personal communication, April 17, 2023). Graduated mentees said this continued into college, as they consider themselves

successful students, but are confronted with the rigor of college. Kata spoke about how her anxiety affected her studies. “My exam scores were not where I wanted them to be. I had an episode...I ended up retaking the class” (personal communication, May 2, 2023). She later mentioned that she needs to get a psychoeducational diagnosis and was not receiving treatment yet.

Other mentees described feelings of imposter syndrome both during the program and college. These feelings often manifested when mentees compared themselves to other cohort members. During her time with MMSEA, Alex expressed doubt about herself, “Am I even supposed to be here? Can I even do this?” (Alex, personal communication, May 8, 2023). Even after graduation, mentees worried about their ability to complete college work. “I cried almost every day...I felt like, in class, everyone else was smarter than me” (Mariam, personal communication, April 19, 2023). These feelings of anxiety around imposter syndrome align with our literature review about some of the obstacles that FGS and minoritized students face when they enter university studies.

Interestingly, our survey revealed somewhat conflicting results around ability and confidence. Current mentees had stronger expectations of their abilities than graduated mentees. On the statement, “I will not be smart enough,” current mentees were more likely to disagree (see Figure 9).

Figure 9*College Outcome Expectation Survey Questions on Confidence*

I will not be smart enough			I will not be prepared enough			I will not be confident enough		
	Mean	SD		Mean	SD		Mean	SD
Current	2.43	1.03	Current	2.52	1.12	Current	2.62	1.32
Grad	3.57	0.98	Grad	3.43	1.40	Grad	3.29	1.70

We observed similar trends for the statements “I will not be prepared enough” and “I will not be confident enough” (see Figure 9). The standard deviation for each group is high, indicating larger variability between responses. However, these data suggest that students who have not yet been through college may feel more confident in their abilities than students who experienced how challenging college was for them. Additionally, many of the graduated mentees attended college during the COVID-19 pandemic, which may also explain some of the differences.

The large variability in scores shows that not all students experience anxiety or imposter syndrome, but coupled with the interview data, there is a clear need to recognize mental health issues during the program and provide students with resources to be successful in college. When we asked Mr. Zamora, “Is there any form of mental health training for mentees,” he replied, “No, unfortunately, we don’t have anything” (V. Zamora, personal communication, June 15, 2023). In our recommendations, we will review possible paths to provide mental health support for MMSEA mentees both during and after the program.

Finding 3: Mentees expressed a need for more intra- and inter-cohort community-building to increase their support networks

One of the significant findings from our analysis is the importance of increasing collaboration and community building within MMSEA. The mentee graduates consistently emphasized the value of connections and the sense of community they experienced during their time in the program. Their shared experiences allowed them to learn from each other and support one another in their academic journeys. Several, however, recommended extended networking opportunities within and between cohorts to enhance the sense of community.

For example, Mariam expressed the need to connect with other alums beyond the three-year program, especially because of the special bonds that formed between mentees, mentors, and other volunteers during sessions. She said, "I know it was only for three years, (but) I would love to hear about my other peers, my mentors, (and) everyone else's mentors because we really did have a connection. You know, we see each other every week for three years. So that just feels like everyone's disconnected right now" (personal communication, April 19, 2023).

Alex also expressed a desire for greater interaction and collaboration among different cohorts, recognizing the potential for peer support and resource-sharing. According to Alex, she was aware that the younger mentees "adored" older mentees and often reached out to them when they were in doubt. According to Alex, "(W)e were all going kind of through it, you know, and it's, we could have used each other as resources instead of, and it's like building friendships," and wishes there were "a few more events where it was more about connecting with the people" (personal communication, May 8, 2023). Not all mentees experienced these relationships because there were few formalized opportunities that connected graduated and current mentees.

Additionally, the mentees recognized the value of peer connections and mentorship. Kata shared her appreciation for an older MMSEA graduate who gave her sound advice when deciding on her college major. Although they had only met when this graduate visited MMSEA, Kata felt comfortable reaching out to him, thus, highlighting the impact of personal connections on decision-making and goal pursuit (Kata, personal communication, May 6, 2023). Multiple mentees identified other mentees as critical role models and support sources within and beyond their cohorts. For example, Lucy recalled how Felix, who was a year older than her, first encouraged her to join MMSEA, then, three years later, inspired her to apply to an out-of-state college. Along with her mentor and other volunteers, Lucy “shared...everything with (them) throughout (her) entire college application journey” (Lucy, personal communication, April 30, 2023). As if she were paying it forward, Lucy was also a role model for a younger mentee who chose to pursue their bachelor’s out-of-state, just like Lucy. According to Lucy, their relationship has gotten stronger over the years, as their “maturity has just gotten to the point (that they are) able to catch up very easily with one another” (personal communication, April 30, 2023).

As reflected in these individual accounts, the mentees see their connections with other mentees as equally valuable as with the adults in the program. Many mentees expressed appreciation for Mr. Zamora’s alumni efforts but are eager to see more. While there are different ways to build intra- and inter-cohort connections, we have included recommendations, including peer mentoring amongst current and graduated mentees.

Finding 4: The transition from high school to college is often difficult for MMSEA graduates, especially related to academic, social, emotional, and financial challenges

Many students struggled with their transition from MMSEA to college. They felt unsure where to find resources on campus. Others expressed a lack of support from their school. First-

generation and minoritized students experienced difficulties with finding support and belonging more often than other peers, and these findings were congruent with the literature (Fischer, 2007). In the transition from high school to college, many students experienced negative feelings, and considered not continuing their studies. However, we also noted that many students feel alone with these feelings, despite multiple mentees expressing them. Feelings of inadequacy, questions of belonging and imposter syndrome were noted in mentee interviews and the literature. Mentees compared themselves to other students and to their own abilities and past performance. If past performance did not match current academic demands, stress increased and resulted in negative perceptions of ability. One mentee graduate described her first semester as a near miss; “My first semester there I almost dropped out of college. I really struggled, at least in my mind...I wasn’t getting straight A’s or even B’s...and fighting for that, you know versus where I came from” (Alex, personal communication, May 8, 2023).

MMSEA provides significant resources and support during their time with the program. We noted this in our interview coding as students discussed mentorships, application expertise, networking opportunities, and academic tutoring to name a few. These resources formally end after college admissions and students must navigate their university on their own.

Mentees expressed a need for further resources during their first year of college. Some remained in contact with mentors, who provided advice during college, while others did not. These relationships were informal and mentor dependent. Many of the mentees expressed a need to connect with someone with college experience as they did not have familial expertise. For some, their MMSEA mentors served as this resource.

From our survey, we also noted that many current and graduated mentees expected to struggle with college-related skills once on campus, and having direct access to someone with

expertise would benefit them as a resource. When asked to what degree you agree with the statement, “I will not know how to study enough,” 62% of the current mentees who responded said they were “neutral” or “agree” (see Figure 10). Graduated mentees concurred, with 57% responding “neutral,” “agree,” and “strongly agree” (see Figure 11).

Figure 10

Current Mentee’s Responses to the Statement, “I will not know how to study enough.”

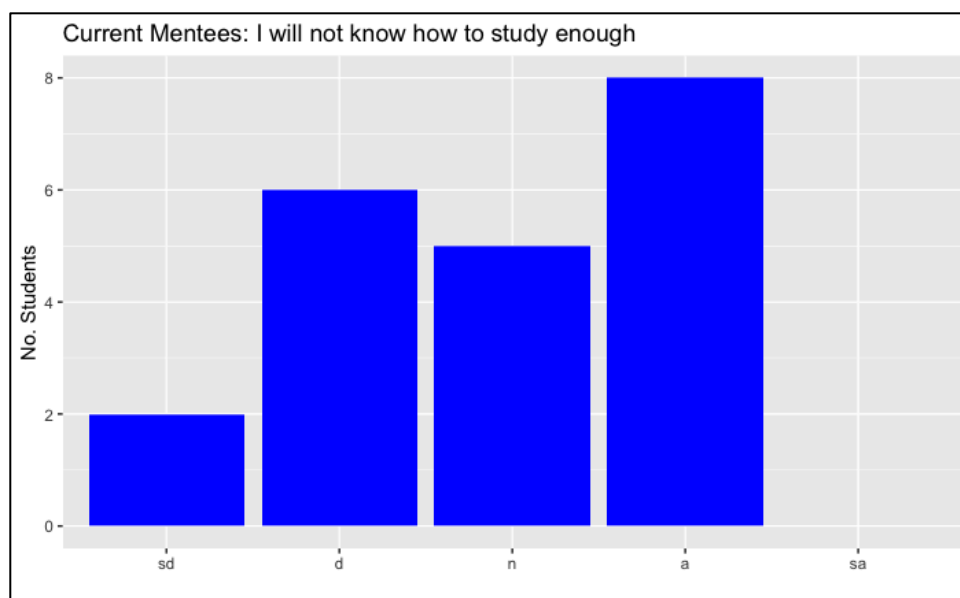
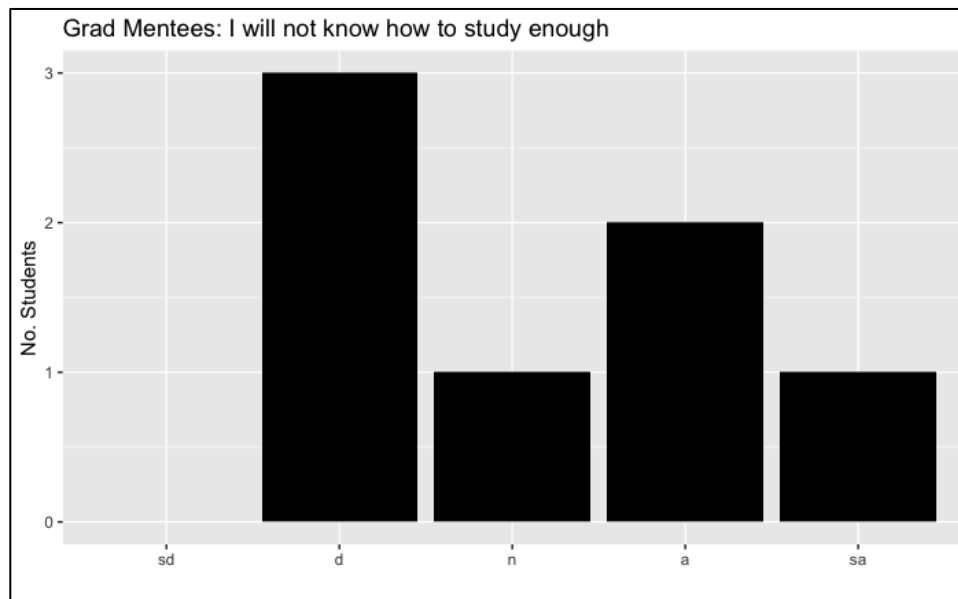


Figure 11

Graduated Mentee's Responses to the Statement, "I will not know how to study enough."



Our literature review also noted the transition period as commonly difficult for all students, but particularly for FGS and minoritized students. This finding, along with the confirmation seen in the literature indicates a need for MMSEA to explore different ways to offer continued support during the first year of college. We will explore this recommendation more in depth in the next section.

IX. Recommendations

Our findings led us to determine four (4) recommendations. With each recommendation, we provided a tool for consideration and use. These recommendations, documents and hyperlinks were compiled into an “evidence-based toolkit” for MMSEA’s future use.

- Recommendation 1: Formalize mentor recruitment and training using evidence-based protocols
- Recommendation 2: Offer mental health training, resources, and access to resources

- Recommendation 3: Develop opportunities for inter- and intra-cohort interactions, including current and graduated mentees
- Recommendation 4: Support mentees' transition from high school to college

Recommendation 1: Formalize mentor recruitment and training using evidence-based protocols

MMSEA's recent creation and use of the mentor interview rating rubric (see Appendix K) suggests an evolution in the mentor "hiring" process. While the rubric categories demonstrate clear alignment with their values of growth, community, commitment, and curiosity, their recruitment process may benefit from additional evidence-based protocols. Fortunately, these protocols exist.

The organization MENTOR has established checklists and processes for establishing mentor programs. MENTOR's *Elements of Effective Practice for Mentoring: A Checklist for Mentoring Programs*, is one such support tool specifically designed to aid programs like MMSEA (MENTOR, 2015). According to MENTOR, "[Elements] details research-informed and practitioner-approved Standards for creating and sustaining quality youth mentoring programs and consequently, impactful mentoring relationships...[and] reflects the most up-to-date research, practice, and thinking in the mentoring field" (MENTOR, 2023a, para. 1). "Elements" provides benchmarks for mentor recruitment and screening to facilitate best-candidate selection and retention. For example, a benchmark for screening includes, "Program engages in recruitment strategies that realistically portray the benefits, practices, supports, and challenges of mentoring in the program" (MENTOR, 2015, p. 1). These checklists will provide MMSEA with externally established, evidence-based guidelines to ensure a comprehensive approach in supporting their efforts.

Training

Once selected, applicants will need additional training. For mentors, “interpersonal skills” among other things, “play a key role in the effectiveness” of the mentor-mentee relationship “particularly when working with more vulnerable youth” (Kanchewa et al., 2017, p. 11). Mentors should provide guidance to develop mentees’ goals rather than dictate what their goals should be. The consequences of a mentor projecting personal desires or opinions over a mentee’s wishes bear out in the literature. As discussed by Kanchewa et al. (2017), mentors who “all[ow] the relationship and activities to be guided primarily by the interests of the youth rather than the interests or expectations of the mentor, tend to be more effective,” (Chan et al., 2013; Jucovy, 2002 as cited in Kanchewa et al., 2017, p. 11). While most mentees expressed positive relationships, the strongest relationships existed when mentors remained with their mentees for the program’s duration.

To ensure consistency of mentor-mentee relationships, MMSEA should train new mentors about how to effectively interact with mentees, including goal setting and providing guidance. Mentoring.org has authored a handbook for mentors entitled, *Becoming a Better Mentor: Strategies to Be There for Young people* (MENTOR, 2022) that could serve as a possible resource to develop this training. This evidence-based handbook provides a skill-building roadmap for mentors in their desire to help youth (MENTOR, 2022). Handbook topics and content include: “Relationship-Building Practices and Practices for Supporting Youth” (MENTOR, 2022, p. 3).

In addition to the handbook, mentoring.org provides a page on their site with training modules that align with MMSEA’s mentor expectations. Some topics of interest include:

- Providing Emotional Support and Empathy

- Attunement in Mentoring Relationships
- Facilitating Group Interactions
- Working with Others in the Mentoring Relationship System
- Honoring Youth Voice and Building Power
- Goal Setting and Support and
- Expanding Networks of Support (MENTOR, 2022b, section 2).

Besides the checklist mentioned earlier, MENTOR also provides “a step-by-step toolkit for program managers” (MENTOR, 2005, p. 1). This resource outlines establishing and maintaining a mentor program and includes best practices in mentor recruitment and training, among other necessary program elements. We recommend that MMSEA adopt these resources or similar alternatives as part of their mentor onboarding process.

Recommendation 2: Offer mental health training, resources, and access to resources

While MMSEA does not currently offer mental health support for mentees, there are several ways they can include mental health support in their program. One such way is to provide students with information and training to help them be aware of and understand possible mental health challenges that may arise. There are open-source and free options to address mentees’ needs. One such free offering is a course entitled *Introduction to Stress for Teens*. This course is available online through the American Institute of Stress (AIS, 2023). This short, introductory course takes approximately one (1) hour to complete and could be offered during regular, Saturday sessions along with other potentially useful stress-mitigation tools like box breathing and mindfulness techniques. These resources, including contact information for mental health counselors, have been compiled and included in the “toolkit” we will provide to Mr. Zamora.

Furthermore, we encourage MMSEA to investigate a partnership with a local non-profit offering free or fee-reduced mental health support to vulnerable populations or private counselors or therapists willing to provide pro-bono therapy sessions. Project Access Northwest (<https://projectaccessnw.org/>) is a 501(c)(3) organization that has been providing various medical services to community members requiring extra support since 2006. Their pro bono counseling service is staffed by certified clinicians and graduate students requiring hours for their degrees. Open Path Psychotherapy Collective (<https://openpathcollective.org/city/seattle/>) is another non-profit specializing in affordable mental health care. With a mission to offer affordable mental health support to lower- and middle-class individuals, this organization has over ten years of experience helping thousands of people connect with a counselor and enroll in one of their online wellness courses. Through this organization, students can access therapy services from licensed clinicians for reduced fees.

Lastly, Ms. Jenna Lott, LMHCA (<https://www.psychologytoday.com/us/therapists/jenna-lott-gig-harbor-wa/1074579>), is a former school counselor, experienced with working with high school students. She specializes in helping students cope with relationship challenges and academic stress and is a compassionate individual who exemplifies true empathy. We contacted Ms. Lott, and she is eager to discuss ways that she may be able to provide counseling services to MMSEA students. We recommend that MMSEA reach out to one of these or similar organizations to provide students with effective mental health support. Starting support during the program will help students treat stress and anxiety once they enter college, reducing the likelihood that mental health challenges will be an obstacle to college persistence.

Recommendation 3: Develop opportunities for inter- and intra-cohort interactions, including current and graduated mentees

Building community is an organizational priority, and MMSEA could develop structures to formalize relationship-building within yearly cohorts, across cohorts, and with former mentees. We recommend that MMSEA expand and strengthen social connections within the existing mentee community. There are opportunities for MMSEA to strengthen relationships among and between cohorts and with mentee alumni. These network opportunities will increase the resources mentees have within the program and, ideally, once they graduate.

For current mentees, we recommend adding opportunities either during or outside of regular Saturday sessions for non-academic social interaction. These interactions would serve as avenues for students to build stronger relationships with their cohort peers. Rather than seeing other MMSEA mentees as competitors or benchmark comparisons for their progress, mentees would develop richer relationships that can influence persistence after the program. Thomas (2000) noted the importance of peer relationships on college persistence. Students who developed stronger relationships with like-minded peers were more likely to continue to pursue their goals. MMSEA could offer social events such as bowling, ice-cream socials, attending a sporting event, or other similar activities that remove the academic structures and provide spaces for mentees to develop relationships outside of structured, academic sessions.

Alumni are also a resource that current mentees could utilize during and after the program to support persistence. By more actively engaging alumni, current mentees could access their perspective and ease some stresses of college transition. Mariam suggested “a portal where all the alumni and the mentees and mentors actually connect together” as a potential solution (personal communication, April 19, 2023). This perspective can serve as an invaluable resource

to frame commonly experienced feelings. We found this backed in evidence in the presentation of “lay theory intervention” (Yeager, et al., 2016). Specifically, by providing a mental framework for mentees to assign future “meaning to experiences,” they may avoid the mental trap that they are alone in their feelings they will experience as first-year college students. This perspective could be shared by graduated mentees to serve as a perspective-building exercise that influences their perception of college adversities thereby diminishing questions of mentees’ self-efficacy or belonging.

MENTOR provides a supplemental guide for “peer mentoring” (MENTOR, 2023b). They describe this interaction between close age groups, like graduated mentees and current mentees, as “near-peer mentoring relationships” (MENTOR, 2023b). Positive social networks are particularly important in mentoring disadvantaged youth and impact on student persistence towards academic goals (Kanchewa et al., 2017; Yeager et al., 2016). We recommend that MMSEA increase alumni involvement through alumni visiting events, pairing mentees with alumni who attended the same university, and provide opportunities for mentees to connect virtually with graduated mentees.

Recommendation 4: Support mentees’ transition from high school to college

We noted three areas of intervention that would support mentees’ transition from high school to college. In addition to mentor follow up during the first year, MMSEA should include instruction about navigating academic support on campuses. Increasing awareness of typical programs or researching campus-specific services once mentees make their college choice will give them a menu of options to seek help in college. Second, and similarly, provide mentees with campus community information involving clubs, organizations, and other groups that promote campus social integration and feelings of belonging. Finally, continue providing mental health

support either through continuing services through a partner organization or assisting mentees in finding services at their school or in their area once they reach university. We will discuss each of these items in more detail.

Academic Support

Many mentees expressed concern about navigating challenging courses or where to find academic support. They struggled with engaging with professors for help, academic counseling services, and at the fundamental level, study skills. Some of these feelings expressed by the mentees appear to relate to academic self-efficacy. Mariam spoke about not feeling as smart as her classmates and her professors, telling her that she was not good enough to do well in her classes. These experiences led her not to speak up when she was not doing well in her classes (personal communication, April 19, 2023). Bean and Eaton (2001) found that building self-efficacy increased the likelihood of academic integration, which led to stronger persistence. MMSEA could include practice with speaking to professors, especially ones in difficult classes to build mentees' confidence in seeking help.

Additionally, MMSEA should include instruction about how to find specific services on campus. Once students choose their university, they should begin to research the multitude of academic support services provided by the school. Students may not know how to access different tools on their campus to support them when needed. Mentors and graduated mentees could support instruction in this area by sharing their experiences, particularly if they attended the same university. These shared experiences are essential to giving students insight into how to manage what is often an overwhelming transition period into college.

Finally, multiple mentees shared that they did not feel prepared to study well. While MMSEA provides excellent academic preparation, part of the rigor of college is the type of work

students are asked to complete. Lucy shared that she did not feel prepared in this area and that it was something she had to develop on her own (personal communication, April 30, 2023).

Cognitive ability, in which study skills are included, is often a more important predictor of college success than academic ability (Brown et al., 2008). In fact, fear of not knowing how to study was one of the top outcome expectations current mentees shared in their survey, as shown in the chart in Figures 10 and 11, as most respondents agreed with the statement: “I will not know how to study enough.” MMSEA could include practice and explicit instruction about note-taking, reading, and study strategies relevant to college demands in their program.

Social Support

Mentees expressed difficulty finding social groups of peers during college. This created stress and feelings of loneliness for some. Feeling different can foster questions of belonging. Some students discussed difficulties making friends or finding their place, especially at larger schools. Isa struggled at “East Coast Ivy League University” because she initially felt vastly different from her classmates (personal communication, April 26, 2023). Elyse was concerned about making friends because her school was large (personal communication, May 9, 2023). Thomas (2000) highlights the importance of strong peer relationships and their influence on self-efficacy, goals, and outcome expectations. Students who find motivating peer groups are more likely to persist because of shared performance attainment goals and mindsets.

Whether impacts to self-efficacy originated with academic performance or the acute awareness of their socioeconomic, minority or immediate familial immigrant status, mentee graduates expressed feelings of “imposter syndrome.” This awareness fostered feelings of inadequacy, even with peers of similar backgrounds and some from the same high schools. One mentee graduate stated, “We had a small cohort of very smart individuals...I felt like I was

expected to show up and also show out...but sometimes that also kind of got to me where I had a lack of confidence in myself...Can I even do this?” (Alex, personal communication, May 8, 2023). Another graduate stated, “Just given like the background of, like my neighborhood, my family. I think it was a big culture shock for me, going to “West Coast University,” and like I think, just seeing the amount of like wealth and privilege...” She further described that the amount of affluence was not what she was accustomed to and caused her to wonder if she truly belonged to that academic community (Karin, personal communication, May 2, 2023).

Interestingly, we also noticed a difference in outcome expectations regarding belonging between current mentees and graduated mentees. Current mentees were more optimistic about their future sense of belonging in college compared with mentees who are in college or have graduated. These especially stood out when asked in general about fitting in and that they would face problems because of their race/ethnic background (see Figures 12, 13, 14, and 15).

Figure 12

Current Mentee’s Responses to the Statement, “I will not fit in.”

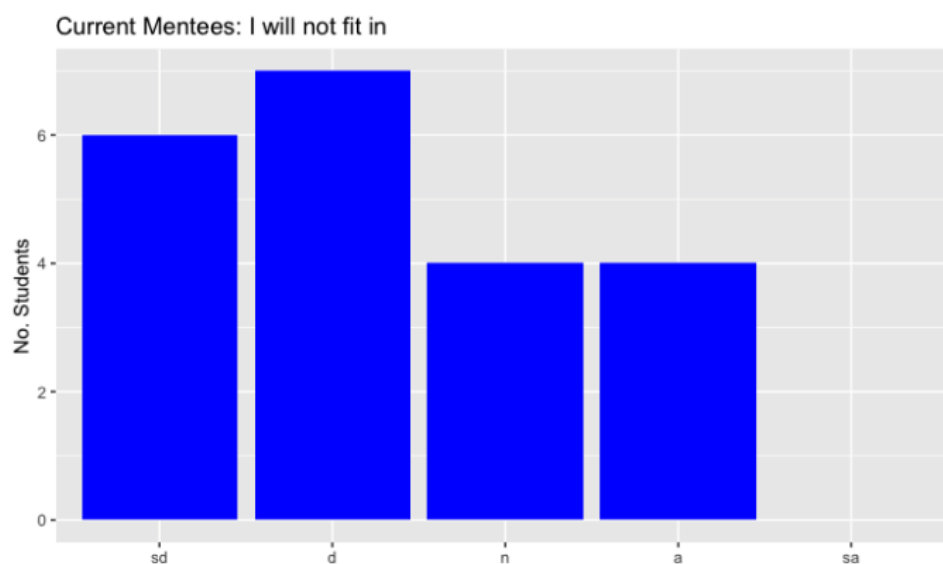
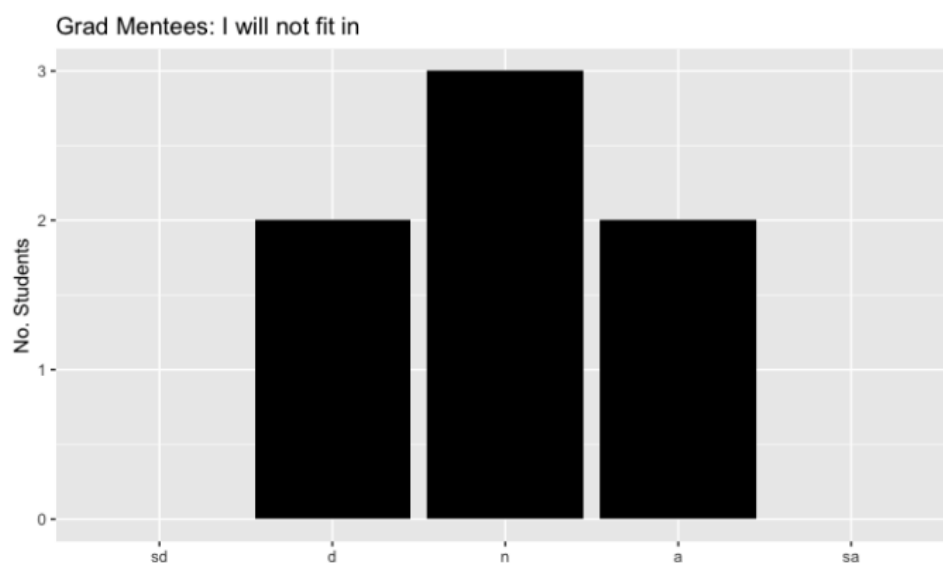


Figure 13

Graduated Mentee's Responses to the Statement, "I will not fit in."

**Figure 14**

Current Mentee's Responses to the Statement, "I will face problems because of my race/ethnic background."

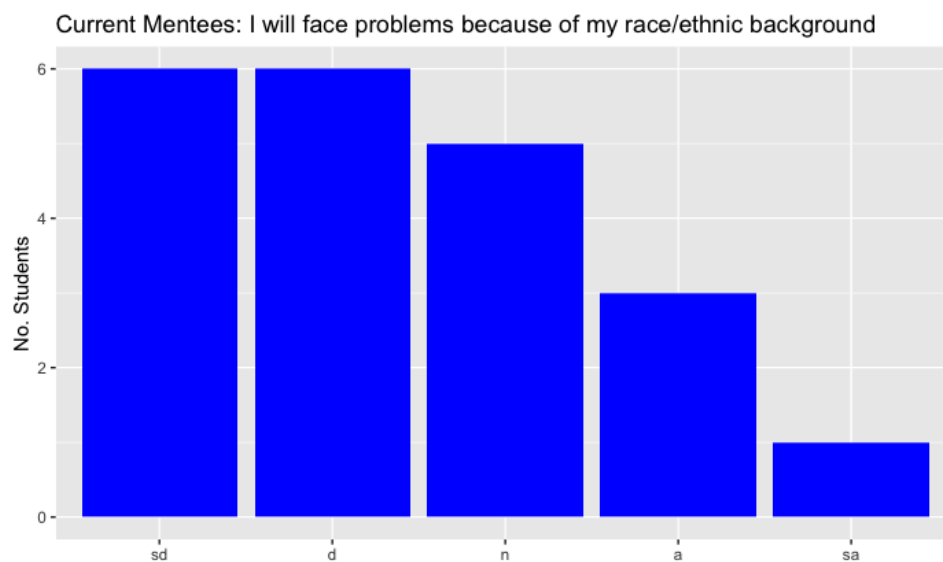
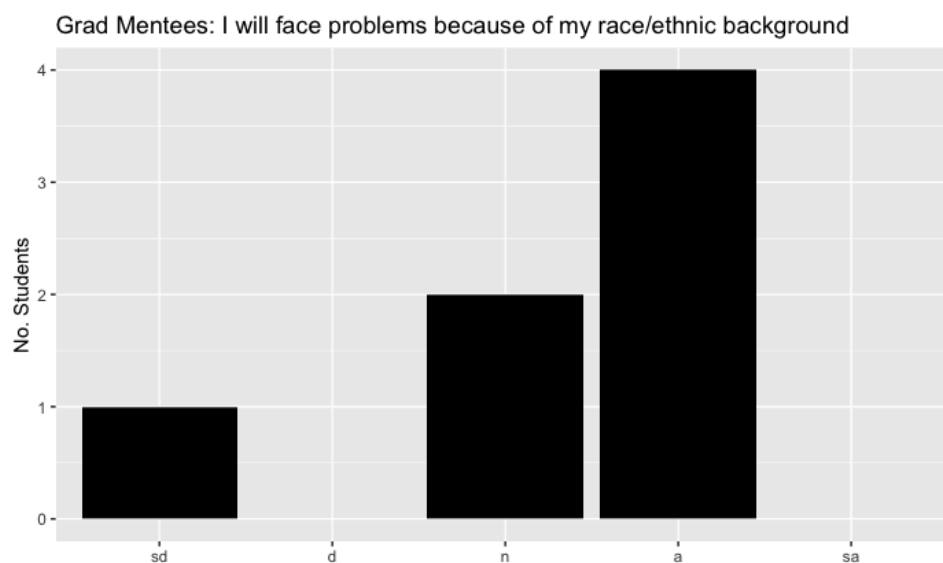


Figure 15

Current Mentee's Responses to the Statement, "I will face problems because of my race/ethnic background."



Our survey and interview results align with the literature that first-generation and minoritized students face greater social challenges as they transition to college. These findings demonstrate a disconnect between belonging expectations before and after attending college. MMSEA should address this during their program and during their follow-up.

There is a two-fold opportunity regarding this issue. Firstly, evidence suggests that exposure to stories that frame these feelings as common to the first-year experience have been used successfully to decrease dropout rates, increase student integration into their college, and increase GPA for those disadvantaged students (Yeager et al., 2016). Secondly, by exposing students to similar experiences via stories from students with similar backgrounds and circumstances, high school students would benefit from reframing of future experiences, and those sharing their perspectives would receive their request to “pay it forward,” and be more active as MMSEA alumni.

In addition to including various social networks available on campuses during MMSEA sessions, we recommended the organization engage the graduated mentees and utilize them as a resource, and this would serve both current and former mentees. Asking graduates to share their first-year college experiences, specifically how they felt (including any feelings of imposter syndrome, lack of belonging and stress) would be beneficial for both groups. This experience-sharing session could include available mental health resources at all the prospective colleges and whether any mentee utilized them and to what degree or success.

Resource Transitions

MMSEA could continue to offer services or promote them through partner organizations in addition to helping mentees find campus resources. For instance, mental health not only impacts high school but also college students, particularly first-generation and minoritized students (Wei et al., 2011). Formalizing this transition through additional established protocols would ensure that essential services, like mental health and study habits are available after mentees' MMSEA experience and would aid in managing the stressors many first-year students experience in the college setting.

The current MMSEA mentor model pairs students for their final three (3) years of high school until college. Continued access to MMSEA services through their first year of college, particularly to their mentors, would provide familiarity and support consistency, thereby minimizing some of the transitional stress experienced by mentees. In past practice, mentor-mentee relationships become informal and often cease once the mentee begins their university experience. Given the potential negative impacts on mentees' persistence during their first year of college, particularly for FGS, MMSEA could alter their mentor model to extend support through mentees' first year of college. For example, MMSEA could establish regular check-ins

with first-year graduated mentees with their mentors, who could provide additional support. This will likely require a retooling of the model since mentors are already expected to commit to three (3) years of support. MMSEA should evaluate the potential benefits of the continuation of mentor support as well as any unintended consequences of this programmatic alteration or others.

X. Conclusion

We feel fortunate to have gained insight into the hearts and minds of MMSEA mentees. In our quest to better understand this group's motivations, needs, and stressors, we feel we have contributed to the conversation surrounding college persistence, and why some dropout patterns exist. More importantly, we hope that our findings, recommendations, and evidence-based toolkit aids Mr. Zamora and MMSEA in their continued success to help their mentees persist through college graduation and beyond.

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Appendix A

MMSEA Facility Photos



1 - MMSEA Entrance Desk; 2 - Seattle University Entrance; 3 - Pigott 3rd Floor MMSEA; 4 - MMSEA Food Station for Mentees; 5 - Pigott Entrance; 6 - Pigott 3rd Floor View; 7 - Pigott Hallway

Appendix B

Federal Reserve Bank of New York -- Historical Data on Earnings by Degree Earned (1990-2022)

FEDERAL RESERVE BANK of NEW YORK



Chart and Table Data for Federal Reserve Bank of New York, *The Labor Market for Recent College Graduates* interactive web feature
Updated: February 10, 2023

Date	Bachelor's degree: 25th percentile	Bachelor's degree: median	Bachelor's degree: 75th percentile	High school diploma: median
1/1/90	39,984	52,353	67,188	38,073
1/1/91	37,393	49,427	64,470	35,673
1/1/92	37,540	50,054	62,567	33,369
1/1/93	36,457	48,610	62,788	34,230
1/1/94	35,387	47,380	61,199	33,561
1/1/95	33,605	46,087	59,529	33,605
1/1/96	33,579	46,638	61,562	31,714
1/1/97	36,458	47,396	62,890	33,724
1/1/98	35,903	50,264	64,086	34,826
1/1/99	37,767	50,942	68,510	35,141
1/1/00	37,387	50,982	67,976	33,988
1/1/01	39,668	52,891	74,378	36,363
1/1/02	40,672	55,314	73,210	35,141
1/1/03	39,758	54,071	71,565	36,260
1/1/04	37,226	49,568	65,059	35,627
1/1/05	37,464	50,952	67,436	34,287
1/1/06	36,295	50,813	68,960	33,624
1/1/07	38,105	49,395	70,564	35,282
1/1/08	36,569	49,619	67,971	33,986
1/1/09	38,186	51,824	68,190	34,095
1/1/10	37,571	50,990	67,092	33,546
1/1/11	39,030	52,039	67,651	32,525
1/1/12	35,688	48,433	63,728	31,864
1/1/13	36,805	50,246	67,832	31,404
1/1/14	37,085	49,447	67,990	30,904
1/1/15	38,522	53,091	74,081	30,870
1/1/16	37,796	52,427	73,154	31,700
1/1/17	37,867	50,139	71,627	33,426
1/1/18	36,126	51,276	69,922	32,630
1/1/19	36,628	51,509	73,257	34,339
1/1/20	39,568	56,526	78,006	33,916
1/1/21	41,037	56,156	75,595	32,398
1/1/22	37,000	52,000	70,000	34,320

Sources: U.S. Census Bureau and U.S. Bureau of Labor Statistics, Current Population Survey, March Supplement (IPUMS); U.S. Bureau of Labor Statistics, Consumer Price Index.

Appendix C

Parent Consent Form



Leadership and Learning in Organizations

March 15, 2023

Dear Parents,

We are doctoral students in the Leadership and Learning in Organizations (LLO) program at Vanderbilt University and are conducting a project aimed at improving the experiences of high school students in the Minds Matter Seattle (MMSEA) program. As part of our project, we would like to request your child's participation in a survey about their experiences in the program.

The purpose of this survey is to gather data that will help us better understand the experiences of students in the MMSEA program. The data collected will be kept confidential. Additionally, we may ask your child to participate in a follow-up interview regarding their experience in MMSEA. The survey and interview will be conducted safely and respectfully, and your child can withdraw from the project at any time.

By signing this consent form, you are granting permission for your child to participate in the survey and interview about their experiences in the Minds Matter Seattle program.

I, [Parent's Name _____], give permission for my child, [Mentee's Name _____], to participate in the survey and interview about their experiences in the MMSEA program as part of a project conducted by doctoral students in the LLO program at Vanderbilt University.

I understand that the data collected will be kept confidential and used only for this project. I also understand that my child can withdraw from the study at any time.

Signature of Parent: _____

Date: _____

Thank you for considering our request. We believe that this research will provide valuable insights into the experiences of high school students in the MMSEA program and will help us make improvements to the program for future students.

Sincerely,

Ann Rubin, Mary Chappell, Julie Chase, and Jon Stewart

Appendix D

MMSEA Survey Questions

Agreement

Hello! We want to learn about your experiences in the Minds Matter Seattle (MMSEA) program. Your responses will be kept completely confidential. The survey should take you no more than 15-20 minutes to complete. We appreciate you sharing your observations. Your participation in this project is voluntary. You have the right to withdraw at any point during the project. The Principal Investigator (PI) of this project, Ann Rubin, can be contacted [*by email*]. By signing below, you acknowledge: Your participation in the study is voluntary. You are 18 years of age OR have provided Ann Rubin or Mr. Zamora with a signed parental permission slip. You are aware you may choose to terminate your participation at any time.

Demographics

1. Your LAST name

2. Your FIRST name

3. Your age

4. Which gender do you identify?

Male

Female

Transgender Female

Transgender Male

Gender Variant/Non-Conforming

Not Listed

Prefer not to say

5. Which race best describes you? Select one or more.

White

Black or African American

American Indian or Alaska

Native

Asian

Native Hawaiian or Other

Pacific Islander

Hispanic

Some Other Race

Prefer Not to Answer

6. High school name

7. Year of graduation from high school

8. List your mentors' names (One name per line - LAST name, FIRST name)

8a. Where did you enroll in college?

8b. Did you graduate?

Yes No

8c. If no, why not?

I am still attending

I am taking some time off, but I plan
to return in the future

Financial Aid or monetary issues

I plan to transfer to a different school

I do not plan to continue my studies

Other

General Self-Efficacy Questionnaire

9. On a scale from 1-5, rate how much you agree or disagree with the following statements.

Strongly
Disagree

Disagree

Neither agree
nor disagree

Agree

Strongly Agree

- a. I can always manage to solve difficult problems if I try hard enough.
- b. If someone opposes me, I can find the means and ways to get what I want.
- c. It is easy for me to stick to my aims and accomplish my goals.
- d. I am confident that I could deal efficiently with unexpected events.
- e. Thanks to my resourcefulness, I know how to handle unforeseen situations.
- f. I can solve most problems if I invest the necessary effort.
- g. I can remain calm when facing difficulties because I can rely on my coping abilities.
- h. When I am confronted with a problem, I can usually find several solutions
- i. If I am in trouble, I can usually think of a solution.
- j. I can usually handle whatever comes my way.

College Outcome Expectations Questionnaire

10. On a scale from 1-5, rate how much you agree or disagree with the following statements about YOUR experience in college (either currently attending or attending in the future):
IN COLLEGE...

Strongly
Disagree

Disagree

Neither agree
nor disagree

Agree

Strongly Agree

- a. I will have money problems
- b. I will have family problems
- c. I will not being smart enough
- d. My family will express negative attitudes about college
- e. I will not fit in

- f. I will not have support from teachers
- g. I will not be prepared enough
- h. I will not know how to study well
- i. I will not have enough confidence
- j. I will lack of support from friends to pursue my educational aspirations
- k. I will face problems because of my gender
- l. I will face problems because of my race/ethnic background
- m. I will have to work while I go to school
- n. I will have to work while I go to school
- o. I will lack role models or mentors

Persistence Questionnaire

Q11. What does the word “persistence” mean?

Q12. Is persistence important to you? Why or why not?

Yes. It is important to me because...

No. It is NOT important to me because...

Prefer to Not Answer

Interview Inquiry

13. Would you participate in a follow-up interview regarding your experiences at MMSEA?

Yes

No

13b. Please provide your email so that we can contact you about an interview

13c. If you prefer, please include your phone number so that we can contact you about an interview

Appendix E

Interview Protocol

The following interview protocol will be applied to ALL interviews.

1. Once an interviewee is selected

- If the interviewee is under 18, double-check that we have their parental consent on file.
- Contact the interviewee and schedule a mutually convenient time for the interview. (If conducting the interview via video call, make sure to ask if the interviewee has a preference between Zoom or Microsoft Teams.)
- Determine which team members will be conducting the interview. (Make sure to have at least two team members scheduled for each interview.)
- Create a calendar invite for the interviewee and the team. The calendar invite will include a Zoom or Microsoft Teams link, depending on the interviewee's preference.

2. Three days before the interview

- Send the following reminder email to the interviewee.

Thank you for making time in your busy schedule to meet with us to conduct this qualitative interview for our capstone project with MMSEA. Your input is valuable to our project, and we hope you find this experience meaningful for you as well!

As a reminder, the interview will take place on (Day of the week, month, day), at (time in Pacific Time). Please log on using the following Zoom/Microsoft Teams link. (Insert Zoom or Microsoft Teams link here.) (You will also receive a separate calendar invite from one of the interviewers with the Zoom/Microsoft Teams link.)

You will be interviewed by (Team Member Name[s]). (S)he will be on standby and let you in on the Zoom/Microsoft Teams call as soon as you log in. Please note that (Team Member Name[s]) will have their camera on, but because we are dedicated to maintaining your comfort and privacy, your camera use will be optional. You may also use a pseudonym or initials if you prefer.

If you have any trouble logging on to the Zoom/Microsoft Teams call or need to reschedule, please call or email Ann Rubin or [other interviewer names] at [contact information].

Again, we thank you for your cooperation and look forward to seeing you on [date].

Best regards,

*Julie Chase, Mary Chappell, Ann Rubin, and Jonathan Stewart
Vanderbilt University Peabody College*

- Review the interviewee's survey response.

- Make note of the interviewee’s definition of “persistence” according to their survey response.
- Highlight any interesting points from their survey response and, if needed, ask for clarification during the interview.

3. Day of the actual interview

- To prevent the interviewee from waiting in the lobby, team members conducting the interview will log on to Zoom or Microsoft Teams five minutes ahead of the scheduled start time.
- Once the interviewee joins the call, the interviewers will follow either the interview protocol for “MMSEA Mentees” or “MMSEA Graduates.”
 - **MMSEA Mentees** are current mentees graduating from high school between 2023 and 2025. Some MMSEA mentees are younger than 18 years of age and must have a signed parent consent form on file. A signed parent consent form is unnecessary for mentees 18 years of age or older.
 - **MMSEA Graduates** are past mentees who graduate from high school between 2016 to 2022. MMSEA graduates are all 18 years of age or older and do not need a signed parent consent form.

MMSEA Mentees and Graduate Mentees

- Introduction, Greetings, and Consent
 - Start off with a brief introduction of participants on the call

Thank you again for your time and participation in this project. As stated, when we first contacted you, this interview is part of our capstone project with MMSEA. The members of this team are all Vanderbilt University students completing their Ed.D. degree through Peabody College.

As you know, the aim of this interview is to learn more about you and MMSEA. We believe that your views and experiences are extremely valuable, and we want to focus on hearing your voice and understanding your experiences better.

- Remind the interviewee that the call will be recorded and transcribed for further analysis. (Obtain their consent to record.)
- Confirm the interviewee’s voluntary participation and anonymity.
- Allow the interviewee to have their video turned off so only their audio is recorded.
- Allow the interviewee to change their Zoom/Microsoft Teams name to either their initials or pseudonym.
- Complete check of volume and recording settings (Zoom/Microsoft Teams & Otter.ai).

Before we begin the interview, I want to remind you that we will record the call and later transcribe it for us to analyze.

Your participation in this interview is voluntary. Everything disclosed by you during this call will remain anonymous unless you give us consent to share your name and identity. While we are conducting this interview, members of the interview team may have their cameras on. However, your camera use is optional, so you are welcome to turn your camera off. You may also change your Zoom/Microsoft Teams name to either your initials or a pseudonym of your choice.

Will you give us your consent to record and transcribe this call?

(Wait for the interviewee's response.)

Would you like to change your Zoom/Microsoft Teams name to your initials or a pseudonym of your choice?

(Wait for the interviewee's response and time to change their name.)

Thank you. Now that you have given us consent to record and transcribe, we will start the recording NOW.

- Interview
 - Turn Zoom/Microsoft Teams Recording ON.
 - Turn Otter.ai ON.

This is [primary interviewer]. Today is [date]. It is [time]. [secondary interviewer] and I will be interviewing [interviewee], who was a mentee at MMSEA from (20XX-20XX).

- See “MMSEA Graduates” questions under “Interview Question Summary.”

- End of Interview
 - Thank the interviewee for their time.
 - Make sure to remind them that we may contact them again with follow-up questions.

Thank you so much for sharing your story and experience with us and for your time. We know how busy you are, but we want to reiterate how critical it was that we heard about your experiences from you in better understanding the three years you participated in MMSEA and who you are today. We can't tell you how much this means to us. If we have any follow-up questions, we may contact you again. Is that okay with you?

(Wait for the interviewee's response.)

Thank you so much. The interview is now officially over. I will turn the

recording and transcribing service OFF.

- Turn Zoom/Microsoft Teams Recording OFF.
- Turn Otter.ai OFF.

4. After the interview

- **Zoom/Microsoft Teams Recording**
 - Check and make sure Zoom/Microsoft Teams recording was successful.
 - Download the file and save it to Capstone Teams and Box folders. (Year of Graduation Interviewee Last Name_ Interviewee First Name_ Date of Interview)
- **Otter.ai Transcript**
 - Check and make sure Otter.ai transcript was successful.
 - Download the file and save it to Capstone Teams and Box folders. (Year of Graduation_ Interviewee Last Name_ Interviewee First Name_ Date of Interview)
 - Clean up transcript for coding.

Appendix F

Interview Questions

Interview Question Summary

Based on our conceptual framework, Social Cognitive Career Theory (Lent et al., 1994), we focus our interview questions on student college persistence factors outlined by the theory. The most important is self-efficacy and the belief that one has the ability to overcome obstacles. This drives student goals, reactions to setbacks, and outcome expectations. We want to keep our conversation focused on these factors for students and how other stakeholder groups address these factors with students. Below are the interview questions and focus group questions we developed following our surveys by group.

MMSEA Mentees (Class of 2023, 2024, 2025)

1. How would you describe your experience with MMSEA so far?
 - a. How did you find out about MMSEA? Who told you and why did you decide to apply?
2. (For class of 2023 only) You are attending college next year! Have you decided where you are going? How do you feel about next year? (Get the conversation centered; also look at where students decided to attend)
3. (For class of 2023 only) Now that you're at this point, how prepared do you feel to take on your first year in college? How do you think MMSEA has helped you prepare?
4. When you first began in MMSEA, did you set any goals about college? If yes, what were those goals? Have they stayed the same or changed? If not, did you set college-related goals later in the program? When did you discuss goals, and what are they?
 - a. Who helped you develop those goals? How has the program helped you progress toward them?
 - b. How have your goals helped you during the program? How have they affected the choices you have made in school and college?
5. How has the program affected how you see yourself as a student? Why do you think that is?
6. In the survey, you defined persistence as “_____.” Any thoughts? What do you think about *your* definition of persistence?
7. Can you describe a time when you faced a challenge that affected you in school or in the program? How did you overcome it?
 - a. Did the program help you overcome it? If so, how? If not, why not?
8. Describe your relationship with your mentor. How as your mentor...
 - a. Helped you through school?
 - b. Prepare you for college?
 - c. Help you through challenges?

9. Do you plan to reach out to your mentor once you're in college? Why or why not?
10. How have your expectations of college changed since you entered the program? Why do you think that is?
11. How has your relationship with other students in MMSEA affected how you see yourself as a student?
 - a. Have you helped a fellow student or been helped by a fellow student during the program? How?
 - b. Have other students (current or already graduated) affected the goals you set for yourself? How?
12. Would you say that MMSEA has been essential to your journey to this point? Why or why not?
13. Do you feel better prepared for challenges in college because of MMSEA? Why or why not?
14. Is there anything else you'd like to add or any question we didn't ask you that we should have?

MMSEA Graduates either in College or Graduate from College (Class of 2016, 2017, 2018, 2019, 2020, 2021, 2022)

1. Please confirm the year you started MMSEA and your year of graduation.
 - a. How did you find out about the program?
2. Are you attending college right now?
 - a. If yes, what is the name of your college, and what are you majoring in?
 - b. If not, please tell us what you are doing.
3. Can you briefly describe your college experience?
 - a. Did/do you feel prepared for the academic work?
 - b. What do/did you find particularly challenging?
 - c. What is/was easier than you expected?
4. In terms of preparedness, what aspects of MMSEA do you think prepared you the most for college or what you are doing right now?
 - a. Was there anything that was unexpected that you didn't feel prepared for? If so, why do you think that is?
5. Describe your relationship with your parents or another significant adult in your life.
 - a. How has this adult helped you through school?
 - b. Prepare you for college?
 - c. Help you through challenges?

6. What are the names of your mentors?
 - a. Please describe your relationship with your mentors.
 - b. Are you still in touch with your mentors?
 - c. How did your mentors help you through high school?
 - d. Prepare you for college?
 - e. Help you through other challenges?
7. When you were at MMSEA, how often did you talk about goals regarding college and after college graduation?
 - a. Who did you talk to about your goals?
 - b. How often did your mentor help you set goals? How often did they help you make progress toward those goals?
 - c. Did you ever feel that the goals you set were beyond reach? Why or why not?
8. In the survey, you defined persistence as “_____.” Any thoughts? What do you think about *your* definition of persistence?
 - a. Does it apply to you in any way?
9. Can you describe a situation where you had to persevere to achieve your college goals?
 - a. How do you think your time in MMSEA helped you persevere?
10. How has your experience with MMSEA influenced your approach to overcoming obstacles in your academic or personal life?
 - a. Are there any specific skills or strategies you learned through your participation in MMSEA that you continue(d) using in college? If so, what are they?
 - b. What impact did the academic and personal support you received from MMSEA have on your overall college experience?
11. How has MMSEA impacted your sense of confidence and self-efficacy when it comes to achieving your goals?
 - a. How did your mentors and other MMSEA members support you during your college journey? Are you still in contact with them? If yes, who are they?
 - b. How did the experience of your other cohort members impact your sense of confidence and your goals?
12. How did your experience with MMSEA prepare you for success after college?
13. Is there anything else you'd like to add that we didn't talk about?
14. Is there anything else you'd like to add or any question we didn't ask you that we should have?

Mentor Interview Questions

1. Describe the primary goal of MMSEA.

2. How does your role as a mentor factor into that goal?
3. Describe your relationship with your mentee.
4. How do you think your relationship with your mentee impacts their lives and futures?
5. Do you help your mentee set future goals? If so, describe that process.
6. Describe how to help your mentee progress towards those goals (if yes to question 5).
7. If your mentee faces/has faced a setback or an obstacle, how do you offer support?
 - a. Do you feel that support is sufficient, or do you feel prepared to offer support?
 - b. Do you feel your mentee is better equipped to face setbacks because of your mentorship?
8. Do you feel that your personal academic experiences impacted your mentee? If so, how? If not, why not?
9. Do you plan to stay in contact with your mentees after they graduate? If so, how? If not, why not?
10. Is there anything else that you'd like to tell us about that we haven't asked?
 - a. What question should we have asked that we didn't?

Appendix G

The Frequency of Categories and Themes Identified in Interviews

Categories/Themes	#	Kata - MC	Kata - JS	Alex - JC	Alex - AR	Karin - AR	Karin - JC	Liz - JC	Liz - AR	Nicole - JS	Nicole - MC	Lucy - AR	Lucy - MC	Felix - JC	Felix - JS	Mariam -	Mariam - JS	Isa - AR	Isa - MC	Elyse - JS	Elyse - JC	
Access to Resources	268																					
Tangible	33	0	0	0	3	17	0	0	3	1	2	1	0	1	0	2	0	3	0	0	0	
Financial concerns	63	1	0	4	6	14	9	1	2	1	0	7	3	2	0	2	1	5	0	1	4	
Expertise	32	0	3	0	0	5	0	0	3	6	4	0	1	0	1	0	1	3	0	4	1	
Mentors	25	4	0	0	2	11	0	0	3	0	2	1	0	1	0	1	0	0	0	0	0	
College app	34	1	0	1	3	9	0	0	1	0	6	3	6	0	0	0	0	3	0	0	1	
Financial	21	1	0	0	0	1	0	0	1	0	2	5	3	0	0	8	0	0	0	0	0	
Opportunities	23	2	3	0	0	2	0	0	2	5	0	0	0	0	1	0	1	1	2	1	3	
Summer prog	34	3	0	0	1	0	2	4	1	0	2	5	5	0	0	3	0	3	2	0	3	
Test prep	3	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
Social-Emo Factors	764																					
Relationships	70	5	0	12	1	3	14	14	1	0	0	0	0	6	0	1	0	0	6	0	7	
Personal	38	8	10	8	10	17	11	3	12	11	9	5	14	6	12	7	7	4	3	7	7	
Family Influence	59	3	1	1	9	2	1	0	0	2	1	3	0	3	4	5	7	7	4	4	2	
Networking	55	2	3	2	5	9	0	2	3	2	2	7	1	2	2	4	0	3	0	1	5	
Influence Cult/Divers	20	1	1	0	2	2	0	0	1	0	0	1	1	0	1	2	0	6	2	0	0	
Self-Concept	5	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
Social Identity	50	0	0	1	7	13	6	1	1	0	0	2	0	7	2	0	2	3	1	2	2	
Belonging	40	0	0	0	5	14	4	0	5	0	0	4	0	3	0	0	0	5	0	0	0	
Self-Assurance	97	2	3	0	13	23	0	0	6	3	4	6	0	0	9	4	5	5	2	5	7	
Confidence	81	1	0	10	5	24	10	4	4	0	0	4	1	5	0	2	0	5	0	0	6	
Self-Advocacy	40	2	0	5	2	6	5	6	5	0	2	0	0	4	0	1	0	0	0	0	2	
Imposter Syndrome	52	0	1	2	14	12	0	5	4	0	0	1	0	1	2	1	0	7	0	1	1	
Mental Health	99	5	2	8	13	8	5	10	15	0	0	2	2	14	2	1	2	3	0	3	4	
Growth Mindset	58	0	1	0	13	14	1	0	5	0	0	3	5	0	6	0	2	6	0	1	1	
Skill Development	258																					
Academic	68	4	6	9	2	7	3	7	0	7	4	3	4	3	2	2	2	0	1	2	0	
Writing	19	0	0	0	0	2	0	1	0	0	3	5	4	1	0	0	0	1	0	0	2	
Math/Science	11	0	0	0	1	1	0	0	0	0	2	0	6	1	0	0	0	0	0	0	0	
Study Habits	14	0	0	0	1	1	1	0	0	0	3	2	1	1	0	0	0	2	0	0	2	
Test-Taking	3	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	
Public Speaking	14	0	0	1	3	0	0	3	2	0	0	1	1	0	0	0	0	2	0	0	1	
Professional	37	0	2	0	5	8	0	0	0	7	4	1	0	1	4	0	1	0	0	3	1	
Critical Thinking	6	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	
Time/Task Manag	32	0	0	5	7	2	2	3	4	0	3	2	1	0	0	0	0	1	1	0	1	
Getting Support	41	0	0	1	9	15	0	0	11	0	0	0	0	1	0	1	0	3	0	0	0	
Communication	13	0	0	2	5	0	0	0	0	0	2	1	0	0	0	0	0	1	2	0	0	

Appendix H

Codebook

Access to Resources				
Theme	Conceptual Definition	Example(s)/Evidence	SCCT Factor of Persistence	Literature
Resources <ul style="list-style-type: none"> • Money <ul style="list-style-type: none"> ◦ Financial concerns • Expertise <ul style="list-style-type: none"> ◦ Mentors <ul style="list-style-type: none"> ▪ college application process ▪ Financial matters • Opportunities <ul style="list-style-type: none"> ◦ Summer programs ◦ Test preparation classes 	<p>The availability and utilization of tangible and intangible supports, opportunities, and assets that individuals can tap into to facilitate their academic success.</p>	<p>Summer program helped prepare Lucy for what college classes would be like -- example the amount of reading required (lines 325-320); The MVSEA summer program rejections helped Isa build persistence (line 472); Kato found that coding was easier than expected because she took a coding class during Harvard summer program (line 156) and she did internship at (a tech company) (through MMSEA) and learned about (STEM skill); decided to pursue (STEM) as a result (lines 167-170). Karin found "West Coast University" to be a huge "culture shock" because of the disparity in "wealth and privilege" amongst students (lines 92-93), which made her feel less connected, even though Alex was a strong student in high school, she almost dropped out her first year because she "struggled, (at least in her mind)" and "fought" to get an A or B in class when she came from a high school with very low expectations (lines 34-37); Veta's high school offered both IB and Running Start, and pursued Running Start because her school was underfunded and lacked class options, but regrets not having taken IB which would have better prepared her for college-level rigor;</p>	Ability/Past Performance	<p>Individuals' abilities and past performance are shaped by the resources they have access to, such as educational opportunities, training programs, mentoring, and support systems. These resources provide individuals with the necessary knowledge, skills, and experiences to develop competence and enhance their performance in a given domain (Lent et al., 1994); Providing support and interventions to help students manage their resources effectively can positively impact their academic achievement (Heller & Cassidy, 2017); Students from lower socioeconomic backgrounds tend to have fewer educational resources and a less supportive home learning environment, which can negatively impact their academic performance (Marks et al., 2006).</p>
		<p>Kato shared that working with her mentor helped feel more confident in her applications. They advised her about what colleges were looking for and how to complete her applications (327). Eliza's mentor worked in marketing and brought her to his office. She mentioned how she that sparked her interest and she could see herself there (21-43). Karin's parents never finished high school and attended a high school where the graduation rate is very low, but her mentors did not let her "slack off" (lines 195-196) and told her they can "get [her into] an Ivy League or "West Coast University", if [she] really want(s) it" (lines 237-238).</p>	Self-Efficacy	<p>Access to resources, such as academic support, role models, and informational materials, influenced individuals' self-efficacy beliefs in mathematics. Higher levels of self-efficacy, in turn, predicted the selection of science-based college majors. Resources can shape individuals' beliefs about their abilities and ultimately influence their career choices and performance in specific domains (Betz & Hackett, 1981); Students who were enrolled in study skills courses initially had lower levels of academic self-efficacy, but they showed significant improvements, surpassing or reaching equivalent levels to the comparison students by the end of the study. (Wiemersbach et al., 2014).</p>
		<p>Mariam's mentor helped her apply for scholarships (432-434), a skill she continued to use after her graduation from MVSEA. She applied for and received a scholarship to provide her with a computer she needed for school and applied for a scholarship that led to a job offer (461, 472-475). As a sophomore, Karin was not a confident writer, but she gradually improved her skills and gained confidence through high school, college, her current job in the medical field, and grad school this fall (lines 362-366). Initially, she was unsure about college, but "without that foundation, I don't think I would have had the guts to apply for grad school and things like that (lines 366-367). Unsure if she was ready for grad school, Alex now works for a (business) firm. Even with prior work experience in (medical) care, Alex initially felt she "didn't deserve a job" but has found major success by incorporating professional and other skills she gained in her past experiences (lines 312-320).</p> <p>Students used the opportunities provided to shape their goals, discover what they wanted to do, and explore those goals through lower-stakes venues like summer programs. Felix stated that summer programs helped him realize what he wanted from school and what he didn't. It also helped him determine a major (215 - 216). Kato mentioned that her mentor shared their expertise which helped her decide what to study (85). Lucy is pre-med and majored in (STEM field) and (social science) in college. She has always loved (science) but discovered her passion for (social science) at "East Coast University's" and "West Coast University's" summer programs (lines 44-58). As her first summer program, Isa chose an intensive geometry course at "ABC High School" over a university summer program so she could take pre-calculus her junior year and be eligible for an (STEM) program in college (lines 164-168). Alex frequently talked about her goals with her mentors but these conversations were always focused on "getting into college, and what (she) wants to do there and accomplish" rather than after college (lines 206-209).</p>	Outcome Expectations	<p>Low-income students who actively participate in college and career preparation activities during high school experience positive effects on their post-high school outcomes. By engaging in academic preparation, career exploration, and guidance services, these students increase their likelihood of enrolling in college, earning a degree, and finding employment (Xing et al., 2015).</p>
			Goals	<p>Access to resources (including academic support services, libraries, and technology) are significant factors that positively impact academic goals and achievement (Schneider & Prackel, 2017).</p>

Social Emotional Factors					
Theme	Subset	Conceptual Definition	Example(s)/Evidence	SCCT Factor of Persistence	Literature
Relationships	Personal Relationships	Connections and interactions between individuals such as the mentees and their families, friends, mentors, teachers, coaches	Nicole discussed the sense of community she felt at Minds Matter. She said that everyone was in the same place coming in and trying to figure everything out. They were able to learn from each other (477 - 479). Looking back, Karin is not sure if MMSEA helped her "persist in the traditional sense" but credits the program for "just showing what is necessary to make even success or persistence possible" by being a caring community that offered "affirmations that...kids need to feel that someone believes in you and that someone knows you can do it" (lines 696-700).	Ability/Past Performance	Student engagement, including relationships with peers and faculty, impacts academic performance and persistence in college. Positive relationships and engagement are associated with higher ability and improved past performance (George D. Kuh et al., 2008).
			Mariam said, "Teachers either make or break a student" (lines 130-134). She had positive experiences with her English Language Learner classes when she first arrived in the United States, recalling the ways in which they encouraged her (141-147). At college, however, she found some of the professors unapproachable and unkind (118). As a result, she struggled in her classes and ultimately decided to switch majors and leave the college (127-129). Alex questioned whether college was the right choice, but decided to apply after her mentor, encouraged her continuously and said, "You never know (unless you try)" (lines 153-158).	Self-Efficacy	Encouragement and positive feedback from others can enhance self-efficacy. Conversely, discouragement and negative feedback can undermine it (Bandura, 1997).
			Felix discussed feeling brainwashed or heavily influenced in what was expected of him, even though that deviated from what he wanted. He said certain staff pushed him towards "prestigious liberal arts colleges," and that they tried to "push me into a direction" (354 - 365). Lucy first decided to pursue pre-med in 9th grade and was only interested in in-state institutions and pursued Running Start in high school. But then senior year, she learned about "Mid-West University" and the opportunities available at a "private school with a huge endowment and a really strong undergrad pre-med curriculum" and immediately made the switch (lines 154-163).	Outcome Expectations	Outcome expectations can be influenced by personal experiences and those of others (e.g., peers, family members) (Lent, 2000); Parental encouragement and openness to supporting their children in college supported positive outcome expectations for enrolling in university, (Mitchall & Jaeger, 2018).
	Family Influence	Family influence refers to the impact of family dynamics, values, beliefs, attitudes, and behaviors on an individual's development, choices, and well-being. It encompasses the various ways in which family members shape an individual's beliefs, aspirations, behaviors, and decision-making processes. Family influence can encompass a wide range of factors, such as cultural traditions, parenting styles, educational expectations, socialization patterns, and socioeconomic background.	Kata doesn't know if she would have finished without the support of family and friends...she aspires to meet the goals they have met (lines 878-882). Veta has always wanted to pursue a career in medicine. Thanks to the ongoing encouragement from her former mentor, along with her coach, family members, and her boyfriend, Veta is working (in medical field), as well as a research lab, and coaching, as she awaits to hear back from a special master's program in medicine (lines 33-37). When Elyse became overworked and lost motivation to go to class, her mentor reminded her of her "ultimate goal" of graduating from college (34:14-35:42).	Goals	Students who receive emotional and academic support from family and friends are more likely to persist in their academic goals (Zavatky, 2015); Supportive relationships have a positive impact on academic goal development and achievement (Richardson, 2012).
			Isa felt pressure from parents to apply to certain colleges because of their prestige (line 492). Her family influenced her decisions to take classes she felt she would do well in (lines 47-48); thinks now that she should have kept her family away from her academic life because they influenced her to take easier classes (96-99) in order to maintain good grades (115-188). With a family member with a disability and a personal desire to lessen family burden, During COVID, Kata returned home so she could give her room and board money to her mother to cover for general living expenses (lines 134-139).	Ability/Past Performance	Specific aspects of parental involvement, such as parental expectations and communication, play a significant role in shaping academic outcomes. When parents set high expectations for their children's academic performance and maintain open lines of communication with them and their teachers, students are more likely to excel academically (Wildner, 2014).
			Kata grew up in a (ethnic culture) family that values education (lines 315-318). During COVID, Elyse returned home to help her family. It was difficult juggling school, home chores, and work, but she pulled it through as she felt this was her duty as the eldest child (3:03-5:05; 34:14-35:42).	Self-Efficacy	Family background (including socioeconomic status, parental education, and parental involvement) significantly affects students' academic self-efficacy, which, in turn, shapes their expectations for career and life success (Kim, 2014);
			Nicole stated that her grandfather was a teacher and so her that "education has always been really important in our family" and that college was the goal. (180 - 183). While Alex's parents did not attend college, she believes they supported her tremendously by expecting their daughter will go to college, (line 102) by providing as much financial support (line 102), and sure she ate well (line 109).	Outcome Expectations	Supportive relationships have a positive impact on academic goal development and achievement (Richardson, 2012).
			Mariam felt her father was disappointed that she wasn't going to be a (profession); he was why she chose that goal (282-284). He didn't think she would be able to accomplish her goal of becoming a (profession) because it was too expensive, and they (her parents) cannot contribute because they are low-income (285-287). Once he realize that she is working two jobs to be able to pursue her career, he is more supportive of her goals (lines 290-291). Alex reflects back on high school and said she "felt like (she) was making choices that weren't actually for (her) but for the people around (her) and what they expected of (her)" (lines 148-149). She also shared that her "anxiety comes from being first in the family (to attend college), but also kind of being the one child that's going to school, and the pressure of making sure (she) succeed(s)" (line 190).	Goals	Among underrepresented first-generation, low-income college students, supportive and encouraging family environments, where the value of education is emphasized, have a positive impact on students' motivation and commitment to pursuing advanced degrees (Tate et al., 2015); Unlike PAP goals, MAP goals are attained to fulfill "personal values, interests, and ideals relative to reasons stemming from perceived social pressure and self-imposed obligations" (Gaudrea, P. 2012, p. 829).

	Networking	Networking refers to the active process of establishing connections and cultivating relationships with individuals who share a common professional or personal interest.	<p>Kata enjoyed the opportunity to be surrounded by others from diverse backgrounds, but with the same goals to go to college (144). Nicole expressed the same about opportunities to meet with industry professionals during her time at Minds Matter (244 - 245).</p> <p>Nicole said that networking built her self-image and taught her to advocate for herself because she had so many opportunities to talk with people. (94 - 96). Elyse also was impacted by networking opportunities, saying, "they each left, like something in me, you know?" (23:25)</p> <p>Felix joined a professional fraternity in college to support his studies (110 - 112). Elyse also participated in many extracurriculars and joined a sorority but felt like she was "just spread out thin...(and) sometimes felt like (she) couldn't breathe" because she could not identify anybody she felt comfortable talking to except her former mentor, Vidya (34:14-35:42).</p> <p>When she was unsure about what path to take, Kata contacted Sam, a 2016 graduate who attended (In-state University) and majored in (STEM field). He mentioned (skill), which she had learned about during the (tech company) internship. As a result, she chose (STEM field) (lines 180-181, 191, 193-194). She also shared that she stays connected to Lucy and Gwen from her cohort because they not only checked on her all the time, but "they're both (her) role model in terms of things, because they already graduated (from college)" (lines 910-914). Lucy values her connections with other MMSEA mentees, summer program attendees, and at "In-State University." She is especially thankful for Felix, who was there for her when she was applying to colleges and helped her tremendously when she made the decision to go out-of-state (lines)</p>	<p>Ability/Past Performance</p> <p>Self-Efficacy</p> <p>Outcome Expectations</p> <p>Goals</p>	<p>Interactions and collaborations with professionals through networked learning platforms can enhance students' self-efficacy beliefs related to social networking and their ability to engage in professional development activities (Anders 2018); Networking provides vicarious learning experiences (Bandura, 1997) leading to increased self-efficacy; Incorporating social networking in teaching practices can develop a more "engaged learning experience" (Glenn, 2000, Hay, 2000, Oblinger & Oblinger, 2005, as cited by Eikenberry, 2012, p. 456) for students who are yearning for more autonomy in the classroom. Such practices can help encourage students to increase classroom engagement while also encouraging closer and more positive relations with professors.</p> <p>Active networking, such as the use of LinkedIn, positively contributes to individuals' career outcome expectations. Active engagement in networking is associated with increased perceptions of employability, higher levels of job search self-efficacy, and enhanced career optimism (Pena et al., 2022).</p> <p>Selection and influence processes are at play in shaping students' achievement goals within their friendship networks. Students tend to befriend peers who have similar achievement goals, indicating a selection process based on shared values and interests. Furthermore, there is evidence of social influence, as students' own achievement goals can be influenced by the goals of their friends over time (Shin & Ryan, 2014).</p>
Influence of Culture and Diversity		Cultural influence refers to the impact that cultural norms, values, beliefs, and practices have on individuals and groups within a particular society or community. It encompasses the ways in which culture shapes and molds individuals' thoughts, behaviors, attitudes, and perspectives.	<p>Alex appreciates the diversity (background, age, and experiences) of the MMSEA community (mentors and mentees) and gives it credit for her ability to talk to different people in college (lines 58-60).</p> <p>For Mariam, the only thing that felt out of reach was due to her father's restrictions (lines 375-376). She described her father as "strict" (line 224) and "protective" (line 300) and said, "'home is like being in a bubble" (lines 310-316). Her father was reluctant to allow her to participate in MMSEA opportunities, but the summer program was a turning point for dad's restrictions. MMSEA talked to him to persuade him to allow her to go (lines 379-386). Her experiences with MMSEA her experiences at MMSEA (especially after the summer program) got him more comfortable with allowing her to pursue academic and work experiences (lines 238-240).</p> <p>Felix talked about what he expected his college experience to be like through based on his background: "Especially being a person of color...an underrepresented (ethnic culture)... I think it's already hard enough not finding representation." (lines 177 - 179). Karin found "West Coast University" to be the "whitest place (she's) ever been (line 96).</p> <p>Kata mentioned how her background influenced her goals, "I know (ethnic culture) people like the neighbors and everything their expectations going to be high" (line 464).</p>	<p>Ability/Past Performance</p> <p>Self-Efficacy</p> <p>Outcome Expectations</p> <p>Goals</p>	<p>Cultural and social structural factors play a significant role in shaping the academic achievement of students from different cultural backgrounds (Pearce, 2006).</p> <p>Cultural and gender norms play a significant role in shaping individuals' self-efficacy, interest, and aspirations in STEM. Societal expectations and stereotypes surrounding gender roles can create barriers and biases that impact girls' and women's confidence in their STEM abilities and their interest in pursuing STEM careers (Chan, 2022).</p> <p>Parents' expectations varies by racial/ethnic group. The relation of parental expectations to concurrent or future student achievement outcomes is weaker for racial/ethnic minority families than for European American families (Yamamoto & Holloway, 2010).</p> <p>Goal commitment is impacted by external factors (authority, peer influence, and external rewards), interactive factors (participation and competition), and internal factors (expectancy and internal rewards). People tend to follow goals set by authority as they are perceived more legitimate. When a goal is assigned, it not only appears more attainable but also shows commitment of the person fulfilling the goal (Salanick 1977, as cited by Locke et al., 1988); According to a study conducted by Wang et al. (2018), social academic goals (i.e., "social reasons for doing well academically; parent-oriented goals and social status goals) are as important as self-regulated learning. Based on their findings of approx 1000 11th grade students in China, social status goals were strongly connected to mastery goals and parent-oriented goals were related to performance-avoidance goals.</p>
			In high school, Alex said she was overworked because "wanted to be good at everything" (line 225) and "tri(ed) to be a part of it all" (line 222). Apart from her job at (retail store), Alex was on the school dance team, cross-country team, and track-and-field team and "maxed out on her (MMSEA) absences" (line 221).	Ability/Past Performance	Ethnic identity can have a significant impact on student academic performance. Students who have a strong connection to their ethnic identity tend to exhibit higher levels of motivation, engagement, and resilience, which positively affect their academic achievement (Banda et al., 2023); Discrimination negatively impact the academic outcomes of Mexican immigrant children. However, children who have a strong and positive ethnic identity are more resilient in the face of discrimination and exhibit higher academic performance (Brown & Chu, 2012).

Self-Concept	Social Identity (belonging)	Social identity refers to the group memberships and affiliations that individuals identify with, such as their ethnicity, gender, or organizational membership (Guan and So, 2016)	When Isa first arrived at Princeton, she worried about not fitting in. In Isa's words, "(She felt) like there's a lot of talk or just underlying kind of mindset like, OMG! Rich people are going to be so mean!" She also continued to say that "(T)hey put a lot of negative light on rich people and made them kind of like the enemy or something. And so I kind of brought that with me." But once she got to meet other students at "East Coast Ivy University", she realized they were all the same and did not feel an "income gap" between herself and others (lines 132-148).	Self-Efficacy	Individuals who strongly identify with a social group are more likely to perceive social support from that group, leading to higher levels of self-efficacy beliefs (Guan & So, 2016); Higher levels of academic self-efficacy, institutional commitment, perceived faculty support, sense of belonging, and positive career outcome expectations are associated with stronger persistence intentions among first-generation students (Garrriott et al., 2017)
			Kata discussed how she expected making friends to be difficult while on campus (line 52). Elyse also mentioned expecting this to be difficult going to a larger school. She joined professional communities and cultural affinity groups, but struggled as classes moved online (video 7:09). Mariam chose a smaller school because she expected it to be easier to make connections, but found the community to not be diverse or as welcoming as she had hoped (lines 120 - 121)	Outcome Expectations	Students who develop a strong sense of identity and envision themselves as successful are more likely to exhibit higher levels of academic achievement (O'Donnell & Oyserman, 2023); First generation college students who experience low/average levels of feeling connected on campus have more negative career outcome expectations (Ma and Shea, 2019); Invisibility refers to feeling unseen, unheard, or marginalized based on one's racial or ethnic background. Racially and ethnically diverse college students who perceive higher levels of invisibility are more likely to have negative career outcome expectations. Invisibility experiences can lead to doubts about their abilities, feelings of exclusion, and a diminished sense of belonging within the institution (Suh et al., 2023).
			Although Alex got into "In-State University" and other grad school programs in (medical field), she declined the admission offers because "(she) wasn't 100% sure that it was the career for (her) that (she) wanted to do, and (she) didn't want to put (herself) in that amount of debt if (she) wasn't sure, because...if (she) had the debt, then (she) would feel obligated to do it" (lines 21-25).	Goals	When students encounter difficulties or face obstacles in their academic journey, they go through a process of reevaluating their goals and developing strategies to overcome the challenges. This process involves managing emotions, seeking support from peers or mentors, and engaging in self-reflection to rebuild motivation and establish a stronger learner identity (Timar-Anton et al., 2022)
	Self-Assurance	Self-assurance refers to a person's confidence in their abilities, their belief in themselves, and their capacity to take action and assert themselves effectively.	At MMSEA, Isa was able to open and trust...felt she was able to speak her mind and be open; that skill helped her open up to friends in college lines (lines 572-576)	Ability/Past Performance	Students with high self-confidence performed better academically (Kukulu et al., 2013); Science engagement/confidence contribute to achievement in science, with contributing influences of family socioeconomic status, sense of school belonging, and gender (Wu & Wu, 2022)
			Mariam struggled with her classes when her professors would discourage her in class, saying she wasn't good enough (lines 131-133). She was shy and didn't speak up, so their approach was unhelpful (lines 248 - 251).	Self-Efficacy	The relationship between self-assurance and self-efficacy is one of similarity and interconnectedness. While self-assurance and self-efficacy are distinct constructs, they both contribute to individuals' beliefs about their capabilities and impact their behavior and
			Nicole said she has always been self-motivated. MMSEA provided tools to achieve what she wanted (lines 464-466)	Goals	Men's and women's goals are not usually predicted by global self-esteem but are associated with specific self-concepts. Women's self-confidence in math/science abilities is associated with higher educational goals, while men's self-confidence in leadership/public speaking is associated with a more traditional pattern of career involvement when their children are young. Men's higher interpersonal self-confidence is associated with giving higher priority to time for their future spouses and lower priority to time for themselves (Zuckerman, 1985).
		Alex talked about her "near miss" during her initial college experiences. "My first semester there I almost dropped out of college. I really struggled, at least in my mind...I wasn't getting straight A's or even B's...and fighting for that, you know versus where I came from" (lines 33-35).	Ability/Past Performance	Imposter syndrome can significantly hinder students' academic progress and well-being (Yantorno, 2022); Students with a "entity theorist" approach (PAP goals) to learning do worse academically when they are at risk of failing (Mangels et al. 2006, p. 75) as they are more prone to negative feedback and end up being more disengaged and uninterested when they are faced with an academic challenge; Many students (including imposters) do not believe that hard work = high ability (Covington & Omelich, 1985, as cited by Thompson et al., 1998, p. 382), "imposters fail to recognize their achievement as a legitimate outcome of success" and give credit to "personal charm, luck, or perceptiveness" and feel guilty for their success (Clarence, 1985, as cited by Thompson et al, 1998, p. 382).	

	<p>Imposter syndrome</p>	<p>The experience of feeling like a fraud despite evidence of competence and success.</p>	<p>Reflecting back on her experience at MMSEA, Alex realizes she may have been suffering from imposter syndrome. "I think it's taken me to, like, maybe even now, to really think I belong there, And this is getting deep into like the voice of my head, you know. When I went there, you know, when I was trying to find people at who worked at (tech company), people who are doctors, doctorates in (STEM field). And I'm from (city), and my parents have an associate's degree. And my grammar is horrible, I say 'like' too much. I say too much 'me,' too. A lot of imposter syndrome, you know. And I think part of the reason why I felt like I leaned towards sports is because I actually felt like something I was good at. Because I was like, 'Maybe I can't push my brain as far mentally, but I know I can push my body, and I actually went through an injury' (lines 376 - 384). She continued to say, "When I went to MMSEA, I felt like there should have been somebody else who should have had my spot; you know, that could have applied to programs and gotten into more programs, or, you know, I didn't always feel as close in our cohort too because I wasn't sure if people were trying to get to know me, or if they were trying to get to know information about me. It was competitive" (lines 387- 392).</p>	<p>Self-Efficacy</p>	<p>There is a significant correlation between imposter syndrome and lower levels of self-efficacy, higher levels of perfectionism, and lower levels of happiness (Pákozdy et al., 2023); According to Yamini & Behbahani Mandanizadeh's 2011 study of Iranian EFL learners, only 9 percent of students with strong sense of self efficacy suffered from imposter syndrome. Therefore, developing strong self efficacy is critical in the success of teaching Iranian EFL learners; According to Thompson et al's 1998 study, students with high levels of imposter syndrome do not celebrate their personal successes and correlates with "low academics and low global self-esteem" (p. 393), thus resulting in a higher level of anxiety and depression due to internalization of failure and a lack of self confidence.</p>
			<p>Alex "We had a small cohort of very smart individuals...I felt like I was expected to show up and also show out...but sometimes that also kind of got to me where I had a lack of confidence in myself...Can I even do this?" (lines 80-85, 114)</p>	<p>Outcome Expectations</p>	<p>Individuals suffering from imposter syndrome have a strong tendency to "generalize" a single failure into something much more that ultimately impacts them greatly (Thompson, Davis & Davidson, 1998); As stated by Shrauger (1982, as cited by Thompson, et al., 1998, p. 383), those with low self esteem focus more on past failures than past successes, and use their memory of failure to predict future outcomes.</p>
			<p>Isa could pursue either a BA or BS in (STEM field) from "East Coast Ivy University." If she wanted a BS, all she had to do was take a (STEM) class. When making this decision, her college advisor told her she would not make it because she did not take AP (STEM) in high school and (STEM) 103 would be too difficult. Isa said this "put a lot of doubts into (her) head" (lines 61-69).</p>	<p>Goals</p>	<p>Imposter syndrome can lead to decreased motivation, increased anxiety, and a tendency to avoid challenging tasks or opportunities (Yantorno, 2022); Students with a "incremental theorist" approach (MAP goals) to learning do better academically (Mangels et al, 2006, . 75) as they are more focused on academic goals.</p>
<p>Mental Health</p>		<p>Mental health refers to a person's overall emotional, psychological, and social well-being. It encompasses an individual's thoughts, feelings, and behaviors and influences how they cope with life's challenges, handle stress, establish and maintain relationships, and make choices.</p>	<p>At times, the amount demanded of mentees affected their mental health, especially if that did not align with their past performance. Felix discussed feeling depressed from the amount of work he faced and the associated stress. He considered himself accomplished and successful, so when he confronted stress, it affected him. (lines 164 - 166)</p>	<p>Ability/Past Performance</p>	<p>A significant proportion of college freshmen experience mental health problems, with depression and anxiety being the most commonly reported conditions. These mental health issues are shown to have a negative impact on academic functioning, leading to lower GPAs, higher rates of absenteeism, and a higher likelihood of dropping out (Bruffaerts et al., 2018); Self-confidence had a positive correlation with student academic performance (Meisha & Al-dabbagh, 2021)</p>
			<p>Mental health surrounding stress, anxiety, and self-image was prevalent in mentee responses. Mariam shared that she used to cry "almost every day" because "I felt like, in class, everyone was smarter than me" (lines 123 - 125).</p>	<p>Self-Efficacy</p>	<p>Positive emotional states and lower levels of stress can contribute to increased self-efficacy, while negative emotions and high stress can decrease it. Individuals often interpret their emotional and physiological states as indicators of their abilities (Bandura, 1997).</p>
			<p>Felix "I didn't realize how burnt out I was. I was severely burnt out like I was honestly really depressed" (line 393-403).</p>	<p>Outcome Expectations</p>	<p>Students learning in a classroom that values MAP goals learn to set their own MAP goals and have higher intrinsic motivation. On the other hand, students learning in a classroom that values PAP goals measured lower levels of intrinsic motivation and self-concept (Murayama & Elliott, 2009).</p>
			<p>Elyse said unattainable goals affected her mental health, stating that staff told her that they were disappointed in her college choices. She also felt applying to highly selective schools set her up for rejection, which was "heartbreaking" (video 26:19)</p>	<p>Goals</p>	<p>Performance approach goals (or PAP, i.e., "to outperform others" [p.1]) and mastery approach goals (or MAP, i.e., "achievement goals to facilitate the acquisition of task-related competence" [p.1]) increase anxiety when pursued with low levels of goal self-concordance (Gaudreau, 2012); Students learning in a classroom that values MAP goals learn to set their own MAP goals and have higher intrinsic motivation. On the other hand, students learning in a classroom that values PAP goals measured lower levels of intrinsic motivation and self-concept (Murayama & Elliott, 2009).</p>

Growth Mindset	A growth mindset is a belief that one's abilities, intelligence, and talents can be developed through effort, perseverance, and learning. The emphasis is on personal development and the belief that abilities are not fixed or predetermined. Individuals with a growth mindset recognize the importance of being flexible in their thinking and behavior.	Felix also shared that challenging mentees to attend summer programs pushed him to learn how to overcome stuff. They taught "you how to overcome a lot of stuff." (lines 535 - 537).	Ability/Past Performance	Students with higher growth mindsets tend to more adaptive, leader to increased academic achievement (Bernardo et al., 2021; Dweck, 2012); Students with higher levels of growth mindset tend to persist when faced with challenging academic tasks and achieve higher academic outcomes (Dweck, 2009); Other studies such as Burgoyne et al., 2020; Li & Bates, 2019 have failed to demonstrate a link between growth mindset and improved student outcomes; Students in Kenya with a growth mindset were more motivated to continue their online learning than those with weaker growth mindsets. This confirms the importance of having a growth mindset and its impact on educational pursuit under very difficult circumstances (Kizilcec & Goldfarb, 2019); Paunesku et al's (2015) study found significant grade improvement amongst students at risk of dropping out of high school upon development of a sense of growth mindset; While less significant, Sisk et al's (2018) study found some evidence supporting growth mindset in improving grades of high-risk students from lower socio-economic backgrounds.
		Growth Mindset opportunities in Minds Matter had mostly positive effects on mentees in terms of their self-efficacy. Felix related the requirements associated with Minds Matter helped him feel that he could make it in college. (lines 470 - 473).	Self-Efficacy	Students with a more developed growth mindset were more likely to have high levels of academic self-efficacy (Dweck, 2009).
		Elyse said she felt confident from her application experiences and applied to jobs at really big companies. Even though she was not successful, she took this as a signal to her outcome expectations. "I saw the rejection as redirection. A lot of people [would say] maybe you'll start here and...you'll move your way up" (video 32:51)	Outcome Expectations	Individuals with a growth mindset are more resilient from errors and mistakes as they are more aware and pay closer attention to these situations and have the skills to learn from them (Tirri & Kujala, 2016).
		Mariam mentioned that the many experiences she had that she considered obstacles helped shape her goals. "I really came a long way. I had a lot of struggles...but I was persistent and adamant to get to where I am right now and work toward my future." (line 405 - 409).	Goals	Individuals with a growth mindset are more likely to adopt mastery-oriented goals in their learning and development. Mastery learning goals refer to a focus on mastering new skills and acquiring knowledge rather than solely achieving high grades or outperforming others, such as with performance goals (Xu et al., 2021); Students learning in a classroom that values MAP goals learn to set their own MAP goals and have higher intrinsic motivation. On the other hand, students learning in a classroom that values PAP goals measured lower levels of intrinsic motivation and self-concept (Murayama & Elliott, 2009); Self evaluation was found to positively supports learning whether they are MAP goals or PAP goals for younger students (Schunk, 1996).

Skill Development				
Theme	Conceptual Definition	Example(s)/Evidence	SCCT Factor of Persistence	Literature
Academic Skills	Academic skill (hard skill) development refers to the acquiring or attainment of knowledge and/or expertise in an academic subject or a "talent" needed to do well in an academic subject. Having strong academic skills leads to better performance in an educational environment. Examples of academic skills development are writing, critical thinking, math, test-taking, presentations, debate, public speaking.	Once Nicole got into college, she found that her high school classes had lacked rigor (lines 71-71) and had not actually prepared her for college (line 444). After the first quarter, she used skills learned from MMSEA to reach the level of rigor she needed to be successful (lines 445-447). Elyse also mentioned that her experience at Running Start (Community College) did not prepare her for college rigor (video 5:38). While she is highly capable in many subjects, Lucy explained that she has always struggled with writing and said the repetitive writing exercises and idea that it is "okay to scrap one thing completely and start on a new project...or fresh new idea" helped her improve her overall writing skills and on college essays (lines 368-378).	Ability/Past Performance	University students with better hard and soft skills (specifically, time management and procrastination, concentration and memory, study aids and note taking, test strategies and test anxiety, organizing and processing information, motivation and attitude, and reading and selecting the main idea) had higher GPAs than students with weaker hard and soft skills; The US workforce lacks employees with strong STEM and soft skills. However, a study on elementary school students attending a disadvantaged school system, both STEM knowledge and soft skills were acquired together in a special program incorporating both skillsets. (Jagannathan, Camasso, & Delacalle, 2019); Students with higher baseline achievement levels measured higher self-efficacy which then impacted higher academic performance. (Honick, Broadbent, and Fuller-Tyszkiewicz, 2023); According to a study by Pajares and Johnson (1994) of 30 undergraduate preservice teachers, those who are confident in their writing skills having a strong past performance in writing. That said, while general self confidence showed positive correlation with writing confidence, expected outcomes, apprehension, and performance, it did not correlate with actual strong writing skills; According to a study by Pajares and Johnson (1994) of 30 undergraduate preservice teachers, those who are confident in their writing skills having a strong past performance in writing. That said, while general self confidence showed positive correlation with writing confidence, expected outcomes, apprehension, and performance, it did not correlate with actual strong writing skills.
		Kata discusses how academic programs at Minds Matter benefited her and also affected her self-efficacy. She took advantage of English support as she learned and improved her English ability. She also mentioned that at times she felt everyone else was more academically prepared than she was. (lines 91; 433)	Self-Efficacy	There is a positive correlation between self-efficacy and academic achievement. Students with greater self-efficacy show stronger academic performance. Furthermore, when students are engaged with their learning, this relationship is further strengthened. (Luo, Chen, Yu, & Zhang, 2023); There is strong correlation between self-efficacy and academic performance. The higher the self-efficacy, the better academic performance. The impact of self-efficacy on academic achievement also increases with the level of difficulty of a task (Honick, Broadbent, and Fuller-Tyszkiewicz, 2023); A student's expectancy value beliefs greatly influence their self-efficacy and academic achievement. The level of expectancy value belief, especially at the start of a program are especially critical in a student's performance for the remainder of the program. (Doménech-Betoret, Abellán-Roselló, & Gómez-Artiga, 2017); A student's level of academic self efficacy has a direct impact on academic performance, expectations, and ability to handle challenges related to performance, stress-management, health, and dedication to remain in school. (Chemers, Hu, & Garcia, 2001); The level of self-efficacy amongst engineering students has a strong impact on their expectations, interests, and selection of major. This proves that self-efficacy is not only a predecessor but also has direct impact on their outcome expectation, interests and goals. (Lent, et al., 2008) Higher self efficacy is correlated with better writing abilities amongst Iranian EFL learners (Yamini & Behbahani Mandanizadeh, 2011)
		Nicole mentioned that Minds Matter gave her skills to help adapt to college academic demands (lines 444-446)	Outcome Expectations	The level of self-efficacy amongst engineering students has a strong impact on their expectations, interests, and selection of major. This proves that self-efficacy is not only a predecessor but also has direct impact on their outcome expectation, interests and goals. (Lent, R., Sheu, H., Singley, D., Schmidt D., Schmidt, L., Gloster, C., 2008)
		Mariam felt like her classes were too hard at the first college she attended (lines 114, 117) "I was always running and not going to my end goal at all" (lines 111-116).	Goals	Goal-setting strategies incorporated into teaching the English language, students in Nigeria (especially female students) were found to attain the language more quickly than teaching without incorporating goal-setting strategy (Abe et al., 2014); Performance approach goals (PAP) have a positive correlation to academic performance but mastery approach goals (MAP) do not positively correlate to academic performance (Harackiewicz et al., 2002, Senko, et al., 2008, as cited by Gaudreau, 2011, p. 1); Students learning in a classroom that values MAP goals learn to set their own MAP goals and have higher intrinsic motivation. On the other hand, students learning in a classroom that values PAP goals measured lower levels of intrinsic motivation and self-concept (Murayama & Elliott, 2009); The level of self-efficacy amongst engineering students has a strong impact on their expectations, interests, and selection of major. This suggests that self-efficacy is not only a predecessor but also has direct impact on their outcome expectation, interests and goals. (Lent, et al., 2008); Teaching that incorporates goal setting activities positively correlates with stronger acquired language (Spanish) acquisition amongst high school students (Moeller, et al. 2012). This correlation gets stronger with more years in the program as student motivation to do well also improves. Goal setting activities include writing of goals, action plans, and reflections. Students with higher set goals received higher levels of STAMP assessment while those with lower goals scored lower on the STAMP assessment. This suggests that the level of goal and the proficiency in goal setting techniques also impacts the effect of goal setting in a student's academic outcome; According to Robert Marzano (2019, as cited by Nordengren, 2019), goal setting can improve student learning by 18 to 41 percentile points; Goal setting allows students to become better learners by helping students "focus on specific outcomes, encourage them to seek academic challenges, and make clear connections between immediate tasks and future accomplishments" (Stronge & Grant, 2014, as cited by Nordengren, 2019); Goal setting allows students to become better learners by helping students "focus on specific outcomes, encourage them to seek academic challenges, and make clear connections between immediate tasks and future accomplishments" (Stronge & Grant, 2014, as cited by Nordengren, 2019).

Professional Skills	Professional skill (soft skill) development refers to skills that are not related to specific subjects but help make the individual more well-rounded and effective. Such skills include but are not limited to: communication, critical thinking, time management, task management, knowing how to obtain help, collaboration, problem solving, professionalism, and leadership.	<p>Many of the mentees talked about how Minds Matter impacted their ability to manage their time. Nicole spoke about the requirement to attend every Saturday along with the additional study requirements helped her learn time management skills she used later (94 - 96). Lucy struggled in her STEM classes in her first year and explains that her struggles come from a lack of rigor in high school as well as lack of study skills. As she explained, study skills are not something you can teach but are mastered by the student as they incorporate it in their learnings, and are usually taught to those who are struggling academically (lines 352-358).</p>	Ability/Past Performance	University students with better hard and soft skills (specifically, time management and procrastination, concentration and memory, study aids and note taking, test strategies and test anxiety, organizing and processing information, motivation and attitude, and reading and selecting the main idea) had higher GPAs than students with weaker hard and soft skills; The US workforce lacks employees with strong STEM and soft skills. However, a study on elementary school students attending a disadvantaged school system, both STEM knowledge and soft skills were acquired together in a special program incorporating both skillsets. (Jagannathan, Camasso, & Delacalle, 2019); Using a problem-based learning approach can help students acquire and practice soft skills in the classroom (Brata & Mahatmaharti, 2020); In a separate study by Betti, Biderbost, and Garcia Domonte (2022), active learning did not particularly improve both hard and soft skills, but proved that only some soft skills can be improved with some hard skills, thus proving that not all active learning improves all hard and soft skills equally and must be carefully considered before implementation.
		Nicole also spoke of developing her sense of self through learning how to network and talk with people in professional settings. It really helped me "advocate for myself and put myself out there." (94 - 96). Elyse talked about how developing people skills helped her overcome her shyness (36:53). Kata mentioned that she is not afraid to speak up, even at work (65:8), but struggled for some time to ask for help in college (lines ---).	Self-Efficacy	In a study conducted by Ismail and Nachiappan (2019), college students in Malaysia with strong soft skills had strong self efficacy. That said, very few of the study participants had strong soft skills and also lacked self efficacy; Proper soft skill training can lead to better soft skill acquisition and stronger self efficacy which results in better understanding of adaptive performance (i.e., ability to understand and adjust to changes in the workplace) (Jole-La Marle et al, 2023)
		Many of the mentees cited their interview practice with Minds Matter as impactful for future experiences. Elyse said they helped her know what to expect from future interviews, feel more comfortable, and credits these experiences as impacting her current successes (video 8:54)	Outcome Expectations	Heckman and Kautz (2012) argue that soft skills are much more important than standardized test scores as they only measure cognitive ability and "general knowledge" that is only useful in academic settings, and not in measuring psychological traits that are more critical in life
		Mariam cites experiences that helped her shape her goals. While she felt that she had to attend a typical university path, she eventually realized that she could adjust her goals. She researched other opportunities and chose to become a pilot from her research (lines 62 - 64).	Goals	Long term goals are beneficial for students to attain self-improvement. That said, to make it more meaningful, the goal(s) should be SMART Goals -- Specific, Measurable, Attainable, Relevant, and Timely. (McGlynn & Kelly, 2017); Teaching that incorporates goal setting activities positively correlates with stronger acquired language (Spanish) acquisition amongst high school students (Moeller, et al. 2012). This correlation gets stronger with more years in the program as student motivation to do well also improves. Goal setting activities include writing of goals, action plans, and reflections. Students with higher set goals received higher levels of STAMP assessment while those with lower goals scored lower on the STAMP assessment. This proves that the level of goal and the proficiency in goal setting techniques also impacts the effect of goal setting in a student's academic outcome; Goal setting must include the following four facets: (1) competence building opportunity, (2) autonomy, (3) aspects that help build interest, and (4) ability for individual to change their own understanding of their ability (Usher & Kober, 2012, as cited by Nordengren, 2019).

Appendix I

Mean and Standard Deviations for Current Mentees

	Mean	Stand Dev
I can always manage to solve difficult problems if I try hard enough.	4.52	0.51
If someone opposes me, I can find the means and ways to get what I want.	3.76	1.00
It is easy for me to stick to my aims and accomplish my goals.	4.19	0.81
It is easy for me to stick to my aims and accomplish my goals	4.10	1.00
Thanks to my resourcefulness, I know how to handle unforeseen situations.	4.05	1.02
I can solve most problems if I invest the necessary effort.	4.67	0.48
I can remain calm when facing difficulties because I can rely on my coping abilities.	3.95	1.07
When I am confronted with a problem, I can usually find several solutions.	3.86	0.73
If I am in trouble, I can usually think of a solution.	4.24	0.54
I can usually handle whatever comes my way.	4.19	0.75
I will have money problems	4.05	0.59
I will have family problems	3.14	1.01
I will not be smart enough	2.43	1.03
My family will express negative attitudes about college	1.52	0.87
I will not fit in	2.29	1.10
I will not have support from teacher	2.29	1.06
I will not be prepared enough	2.52	1.12
I will not know how to study well	2.90	1.04
I will not have enough confidence	2.62	1.32
I will lack support from my friends to pursue my educational aspirations	2.19	1.12
I will face problems because of my gender	2.19	1.29
I will face problems because of my race/ethnic background	2.38	1.20
I will have to work while I go to school	3.81	1.08
I will lack role models or mentors	2.19	1.03

Mean and Standard Deviations for Graduated Mentees

	Mean	Stand Dev
I can always manage to solve difficult problems if I try hard enough.	4.71	0.49
If someone opposes me, I can find the means and ways to get what I want.	3.86	0.90
It is easy for me to stick to my aims and accomplish my goals.	4.43	0.53
It is easy for me to stick to my aims and accomplish my goals	4.29	0.49
Thanks to my resourcefulness, I know how to handle unforeseen situations.	4.57	0.79
I can solve most problems if I invest the necessary effort.	4.57	0.79
I can remain calm when facing difficulties because I can rely on my coping abilities.	3.86	0.38
When I am confronted with a problem, I can usually find several solutions.	3.86	1.07
If I am in trouble, I can usually think of a solution.	3.71	0.76
I can usually handle whatever comes my way.	4.29	1.11
I will have money problems	4.43	0.79
I will have family problems	3.43	1.40
I will not be smart enough	3.57	0.98
My family will express negative attitudes about college	1.57	0.79
I will not fit in	3.00	0.82
I will not have support from teacher	2.29	0.95
I will not be prepared enough	3.43	1.40
I will not know how to study well	3.14	1.21
I will not have enough confidence	3.29	1.70
I will lack support from my friends to pursue my educational aspirations	1.14	0.38
I will face problems because of my gender	2.43	1.13
I will face problems because of my race/ethnic background	3.29	1.11
I will have to work while I go to school	5.00	0.00
I will lack role models or mentors	2.29	1.11

Appendix J

Current Mentee Survey Responses to Questions 12 & 13 and Keywords

Question 12: What does the word "persistence" mean?	KEYWORDS					THEMES			Question 13: Is persistence important to you? Why or why not? - Yes. It is important to me because...(type in the text box -->)	Important (Yes/No)
	Patience/ Don't give up	Continuation / Keep Going	Work Hard / Trying Best	Difficulty / Challenging	Goal	Sense of Time Commitment	Positive Outcome	Negative Outcome		
To be patient when going towards a goal even when the outcome at first isn't desirable.	1	1		1	1	1	1	1	Yes	1
Persistence means to continue during difficult times even if you don't want to keep going.		1		1		1			Persistence is important to me because it's important for me not to give up.	1
It means continuing to work hard even through the most challenging situations.		1	1	1		1			Yes, because it is the main reason why I've made it this far.	1
Persistence is the ability to keep trying something even after trial and error.	1	1		1	1	1	1	1	Persistence is important to me because I cannot go through hardships without having to try. Sometimes things will come naturally to me but I have to realize that not everything is like that.	1
Persistence is the ability to continue something, even when faced with challenges.		1		1	1	1			Yes, persistence is important to me because it demonstrates one's ability to overcome obstacles, whether it be in regard to school, work, or any other aspect of life.	1
Persistence means keep reaching at your goal through determination no matter the situation.	1	1	1	1	1	1	1	1	It is very important to me because it is what I lack, if I have enough persistence I can do a lot better.	1
Trying your best even when facing difficulty.			1	1					It is. It shows who you are as a person and how your willing to stand up even when it's hard too. It's a great trait to have.	1
to keep trying, even when things get tough.	1	1	1	1		1			yes, because life isn't always sweet and I believe my response to adversity is the only inevitable feature towards a solution.	1
To keep trying		1				1			It's important for me because it's what gives you the motivation of continuing even when things don't work my way.	1
To me to persistence means to continue to try even when there are many obstacles in your way.		1	1	1		1	1	1	I think when you come from a lot of minority backgrounds it's important to be persistent because things might not come as easily and you often have to fight to get treated fairly.	1
Persistence to me is the ability to have stamina and continue through an act or task that requires a lot of strain (emotionally or physically) for a positive outcome. It's when you are struggling and you are able to hold on.	1	1	1	1	1	1	1		It's important to me because it shows that I am capable of anything	1
To continue despite challenge		1	1	1		1	1	1	yes because we have to continue no matter what	1
Persistence to me means keep trying, keep doing what you're doing to benefit yourself, don't give up	1	1	1	1	1	1	1		Its what's gonna help me achieve my goals.	1
Persistence means being able to work through problems or toward goals even if dissuaded.	1	1	1	1	1	1	1	1	Yes. Persistence is important to me because I think being persistence allows you to have breakthroughs in whatever you are learning or solving.	1
I think persistence means to consistently work toward your goals.		1	1		1	1			Yes it is important to me because I think it is necessary to be persistent to accomplish your goals, especially tedious ones.	1
I think persistence means you're on top of everything and not afraid to take that risk when necessary.				1					in the future I need to know not to procrastinate as much in future because I can fall behind easily.	1
Persistence for me is to keep pushing/going no matter what problems you face. It's to stay focused and find a solution even if that means asking for help from another individual(s).	1	1	1	1	1	1	1	1	Persistence is very important to me because personally, it's what keeps me going. I go through many issues in my school/personal life, but with persistence and help from the people around me, I can achieve my goals and overall find solutions for my issues.	1
persistence means an ability or effort to keep trying and pursue a goal, even when it seems very difficult or impossible	1	1	1	1	1	1	1	1	it is a really important aspect to have when I'm working toward my goal, because I sometimes feel really overwhelmed when it's really challenging and difficult.	1
TOTAL	9	16	12	16	10	16	10	8		18

Appendix K

MMSEA Mentor Interview Rubric

Values	Description	<i>excellent</i>	Recruiter's Rating	Manager's Rating
<i>I. Growth</i>	1. Applicant demonstrates experience working with diverse and underserved groups and individuals, and advancing diversity, equity, and inclusion, in their work, service, and life in general.	4: Has worked with individuals who are underprivileged and/or people of color in an educational setting 3: Has worked with individuals who are underprivileged and/or people of color but not in an educational setting 2: Has worked with other underrepresented groups that do not necessarily share struggles of our students 1: Has no experience; struggle with this question		
	2. Applicant demonstrates working with high school students as mentors, instructors, teachers, etc.	4: Has experience teaching/mentoring high school students as an adult. 3: No experience with high school students, but similar experience mentoring/teaching other student groups such as undergraduates, middle school students, etc. 2: Has worked with high school students while still studying at high school (e.g., peer mentoring); mentoring colleagues in a work setting 1: No experience		
<i>II. Community</i>	Applicant demonstrates interest in being part of the community beyond assigned role of an instructor or mentor.	4: Ability to articulate clearly how they envision their future with MMSEA 3: Demonstrates interest in learning how they can contribute to MMSEA 2: Hasn't given it a thought but willing to have a conversation in the future 1: Demonstrates no interest		
<i>III. Commitment</i>	1a. Instructor: Applicant is willing and able to attend and actively participate in all Saturday sessions throughout the school year.	4: Does not foresee attendance issues now or in the future AND demonstrates understanding of how inconsistent attendance negative affects mentees 3: At the moment doesn't foresee any attendance issue but cannot answer for the future 2: Expects to miss some sessions (up to 20% or about 5 sessions during a school year)." 1: Hesitates/unable to provide a confident answer; Expects missing more than 20% or 5 sessions in a school year		
	1b. Mentor: Applicant is willing and able to commit to MMSEA in the long term (3 years) .	4: Does not foresee attendance issues now or in the future AND demonstrates understanding of how inconsistent attendance negative affects mentees; can commit to 3 years. 3: At the moment doesn't foresee any attendance issue but might later 2: Expects to miss some sessions (up to 20% or about 5 sessions during a school year)." 1: Hesitates/ unable to provide a confident answer; Expects missing more than 20% or 5 sessions in a school year; Unable to make 3-year commitment		
	2. Applicant has an understanding on how to nurture and build a relationship and has effective communication skills.	4: Ability to articulate by providing clear concrete examples 3: Doesn't have relevant experience but is able to articulate on how they would handle the situation 2: No experience; expresses relying on others (e.g., leaders, the organization) to build relationships 1: Provides an incoherent answer		
<i>IV. Curiosity</i>	Applicant has come prepared with questions to ask about the organization.	4: Has researched the organization and asks insightful questions 3: Asks meaningful questions, but demonstrates relative lack of research into the organization 2: Superficial questions/time filler 1: No questions throughout the interview; demonstrates no interest in learning more		
<i>*Please note that some of these descriptions serve as examples of answers that could fall under each score.</i>	<i>**total about 25 Saturday sessions</i>			