The Relationship Between Onboarding and Student Persistence in Urban Precollegiate Organizations

Jennifer M. Ziegenfus

Summer 2021

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Jennifer M. Ziegenfus
Vanderbilt University: Nashville, Tennessee
Summer 2021

Submitted in fulfillment of the requirements for the degree of
Doctor of Education in Leadership and Learning in Organizations

Dr. Eve R. Rifkin, Capstone Advisor

Acknowledgments

Completing a degree amidst a pandemic has challenged and stretched me in ways I could not have imagined. Resilience and determination were needed to rise above the unexpected challenge and persist to degree completion. I was not alone in this journey. I attribute much of my success to the support and encouragement provided by family, friends, colleagues, peers, and faculty.

My fiancé – You edited my papers, wined and whined with me, and encouraged me to "just go write." You brought me an aperol spritz on weekend mornings and reminded me that the payoff was right around the corner. While I'm grateful for all that support, it was your love and compassion that gave me the strength to persevere. I can't wait to become Dr. and Dr. in 1 year and 100 days.

The OG Dr. Z – Dad, you have always been my guiding light. Your accomplishments are nothing short of remarkable and I'm so thankful to have been raised by a role model who truly encompasses the qualities I hope to embody. Thank you for always reminding me what I'm capable of accomplishing. I will never forget the tears and doubt that you helped me rise above.

East Coast friends and family – I moved 1,700 miles across the country while pursuing this degree. Yet, I never lost the love and support of people who have been there from the beginning. Thank you for not forgetting about me and always sending encouraging texts and DMs. I'll admit I was nervous about my move for fear of being lonely, but I never felt alone with this group cheering me on from afar.

Dr. Gluck and Dr. Murphy – You girls came into my life when I needed it most. I knew this degree would be difficult but you both kept me sane during the most challenging of times. I will not miss making PowerPoints with you, but I will miss learning and connecting with you each week. Both of your futures are so bright and I feel humbled to have obtained this degree with you both.

Cohort 4 – It's been a wild ride. I am in awe of your accomplishments and ability to persevere. I wish this group of rockstars a lifetime of happiness, relaxation, and fulfillment with your upcoming endeavors.

Dr. Eve Rifken – I remember my first class of this program in August 2018. Honestly, I was terrified. Looking back, I am so grateful it was you that helped set the foundation for the three-year journey. You were always reliable and honest with your contributions and belief in our cohort's success. Thank you for believing in me as my Capstone Advisor and supporting me to the end.

Building Steps – My partner organization contributed so much more than I ever anticipated. Debra, thank you for your willingness to accept me into your organization for this work. Courtney, thank you for your continuous support in answering hundreds (thousands?!) of my questions. I am thankful to have been a part of this journey with an organization who is transforming the lives of Baltimore City youth.

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Executive Summary

Building Science, Technology, Education, Partnerships (STEPS) transforms the lives of Baltimore City youth through precollegiate and college-level programming. For the last two decades, more than 500 program alumni have earned degrees from more than 60 colleges. This impressive statistic runs counter to the 9% college degree completion rate of Baltimore City students. It is through progressive high school and college programming that Baltimore scholars realize their potential as future contributors to the science, technology, engineering, and math (STEM) workforce.

The organization's 80% college completion rate is evidence of their success. Building STEPS can influence Baltimore City students but only if students retain. The organization currently reports a 29% loss of students within the first year of programming. While they are aware of some unavoidable reasons for this loss, there are several unknown reasons for student loss that deserve exploration. To assess these shortcomings, the following research questions will be examined:

Question 1: What are student's experiences and perceptions during the onboarding phase of precollege programming?

Sub-question 1: To what degree does the program meet student expectations?

These questions are designed to explore the onboarding phase of the program which take place each year from May through December. This is the period between a student's program acceptance and the end of their first semester of programming. It is within these critical months that students withdraw, are no-shows, transfer to non-partner high schools, or are dismissed for attendance violations.

While the primary research question is designed to assess lived experiences and perceptions during the onboarding phase, the sub-question is designed to measure the degree to which the program meets a student's expectations. Occupational research identifies a relationship between met or unmet expectations and turnover (Dunnette et al., 1973; Katzell, 1968; Ross & Zander, 1957). This question will help to identify if there is a gap between what the student anticipates happening and the lived experience.

This mixed methods study reveals five unique findings about the organization's onboarding phase and program expectations. The findings expose a relationship between the high school an accepted student attends and the GPA of students who persist. Within the onboarding phase, students leave the program for a variety of reasons and at different times of the year. In fact, most students do not persist because of mandated dismissals from attendance violations. The majority of these dismissals happen at the start of the spring semester. To qualify for a dismissal, a student must have already missed three events. Therefore, despite most junior dismissals occurring in January or February, this is a result of fall absences.

The findings also reveal that more than 50% of students do not persist from one third of the partner high schools. In fact, 100% of accepted students from two high schools have not persisted over the last five entering cohorts. There is also a relationship between the students who do not persist and their GPA. Most students who leave have a lower GPA than the average GPA of admitted students from that high school.

Although the goal of this capstone is to identify the relationship between persistence and onboarding, there is no one-size-fits-all solution to address persistence issues. Student behaviors vary according to individual expectations and if those are met or unmet. Most

students learn about the program from information sessions hosted by their high schools. Current participants admit that they had a lot of uncertainty about committing and how their experience would benefit their future. Fortunately, most students who chose to participate, and later persisted, report a positive outlook on their programmatic experience and felt excited and confident about the approaching college admissions process.

Organization recommendations center on improvements to the recruitment process and additional support during the onboarding period. Program participants and non-participants express hesitancy in their decision to join Building STEPS. Some cannot envision how, or if, the program will be impactful. It is recommended that seasoned participants be incorporated into the high school presentation to emphasize mentorship and socialization. Prospective students can develop a better understanding of the level of commitment and debunk program fears through transparency from a current or past participant.

The highest percentage of student loss results from junior dismissals. To combat this loss, accountability partnerships with high schools and between participants should be implemented to foster more opportunities for socialization of newcomers and improve motivation levels. The organization should also reconsider the current attendance policy. An amended policy would allow students to appeal their dismissal after three absences and adjust the modality of the appeal from written to face-to-face.

A final recommendation is for the organization to reevaluate their relationship with specific high schools. A large percentage of students are lost from five of fifteen partner schools. The organization should explore if this is a result of high school administration, lack of support, or marketing to the wrong student population.

Introduction

Building STEPS is a non-profit organization offering college and career programming to Baltimore City youth. The Chief Executive Officer of Building STEPS launched the program 20 years ago "…with the sole purpose of creating a college pathway for underrepresented students to become STEM professionals" (Building STEPS, n.d.-c). The organization partners with 15 of 24 traditional secondary schools (Baltimore City Public Schools, n.d.-c) in the Baltimore City Public School (BCPS) system (see Figure 1). This partnership allows Building STEPS to actively recruit students during their sophomore year to

Figure 1: Building Steps Partner High School Locations (Building STEPS, n.d.-d)

begin precollege preparation in the student's junior year. Once enrolled, students receive guidance in precollege preparation during high school with a continued mentorship commitment during college and as alumni of the program.

BCPS has been on a rollercoaster of attempted reform for decades. Problems surrounding school funding, questionable leadership from city principals, and bureaucratic obstacles to school self-governance are only a few of the ongoing quandaries in this urban district (Gross & Jochim, 2016). Coupled with a city-wide 70.33% average high school graduation rate in 2019 (Maryland State Department of Education, 2019), compared to the 85%

national average (National Center for Education Statistics., n.d.), and a 45.3% college enrollment rate in 2018 (Baltimore Education Research Consortium, 2020) there is strong evidence to support the need for additional resources for college-destined urban youth. Not only does Building STEPS provide critical support to advance high school graduation, nearly 80% of the participants will later graduate from college (Building STEPS, n.d.-c).

It is not enough for students to join pre-collegiate programs. Students must also persist and remain engaged in these experiences. Building STEPS reports an average 29% loss in participants between the time they are accepted into the program and the end of the student's junior year. While there are unavoidable reasons for some (e.g., family relocation), there is an unexplained persistence issue in the early phases of the program.

The purpose of this capstone is to explore the relationship between the onboarding phase and its connection to student persistence in the program. Persistence in Building STEPS is measured by continuous enrollment from the start of junior year through high school graduation. The onboarding phase consists of the summer prior to starting the program through the fall of junior year. This period can begin as early as May of sophomore year and concludes in December of the student's junior year. The term "no-show" will identify students who drop out prior to the start of programming. Much is known and discussed regarding college-intending high school graduate no-shows, or "melt" (Castleman & Page, 2014; Castleman et al., 2012), but little research exists on persistence for precollege programs. The word "dropout" is used to describe all students who start the program, yet do not persist for a variety of reasons.

The goals of this research are to help Building STEPS: 1) identify programmatic hurdles students experience in the early stages of their involvement; 2) provide more access to an already underrepresented college population.

Organizational Context

Recruitment and Programming

In 2019 the median household income for Baltimore City residents was $50,369 compared to the national average of $65,712 (U.S. Census Bureau, 2020). This statistic is coupled with 22% of Baltimore City residents living at or below the poverty line (Building STEPS, n.d.-e). Youth from lower socioeconomic strata are already poorly represented in higher education (Hearn, 1984, 1990; McDonough, 1997) and in many cases precollege programs afford students the only pathway to apply and persist through college. Building STEPS is guided by the belief that a student's background does not have to determine their life trajectory. Their commitment to Baltimore City students is evidenced by their 80% college completion rate.

Early in the calendar year, Building STEPS recruits high school sophomores from Baltimore Public High Schools to apply for a fall start. Each partner high school sends Building STEPS a list of students with a defined minimum grade point average (GPA). If the high school is willing to provide addresses, Building STEPS sends a postcard home to the student and family members. This postcard serves as an invitation to their respective schools' information session. Students who attend the information session are asked to share their address, email, and phone number. Once the contact information is obtained, the organization can use a combination of social media, postcards, emails, letters to the parents, and text messages to

encourage applications. An interest form (see Appendix A) is also available on the website so that students can request an application.

An ideal applicant has an interest in STEM. Students are also required to hold a minimum cumulative 3.0 high school GPA or B- average, have a strong attendance record, and attend one of the 15 partner high schools (Building STEPS, n.d.-b). During the application process, students and their parent/guardian sign a "statement of commitment". Among other things, they agree to abide by the attendance policy, accept that programming will require school-day absences, and acknowledge that transportation is only offered from certain high schools.

Each year, Building STEPS invites a new cohort of students. Those who accept the offer complete a participation agreement and permission form in the summer before their junior year of high school. Family members are also required to sign documents acknowledging participation. Submission of these items is a signal of an intention to participate.

Progressive programming commences at the start of their junior year. Programming begins with a welcome session followed by an orientation to set student expectations. The sequence of junior seminars that follow consist of interactive experiences with STEM-focused organizations in and around the Baltimore metropolitan area. Students also gain their first exposure to the college application process during these workshops. In a traditional year, college workshops and junior seminars are held during the school day between 8 am and 2:30 pm. Students gather at one of six BCPS schools where a bus takes them to the event location. The list of attendees is sent to the respective high school to mark a student present for the school day.

In addition to the Junior Seminars, there are five progressive programming components throughout the duration of the program (see details in Appendix B):

- Junior Seminars (juniors)
- Summer Experience (rising seniors)
- College Workshops (seniors)
- College Connect (college years)
- Alumni Services (college graduates)

This sequence helps a student acclimate to the three stages of the college enrollment process. Step one is the period where a student decides if they will go to college, followed by the knowledge acquisition stage, and finally the stage where a student commits to a college (Hossler & Gallagher, 1987). Not only does Building STEPS guide students through these benchmarks, the organization sees these students through college and into their professional career or graduate school.

It is a rarity to find a local organization who can provide a fluid stream of high school, college, and career supports when you consider the number of large federally funded programs who work with students in high school or college, but not both nor consecutively. The first federally funded TRIO program was founded in 1964 after the signing of the Economic Opportunity Act (Armesto & McElroy, 1998). These programs encourage and support students from disadvantaged communities to pursue post-secondary opportunities. While some programs provide financial support and college check-ins, students are not receiving the academic, social, and psychology supports Building STEPS continues to provide.

College and career support are not the only unique opportunities Building STEPS offers as compared to other precollege programs. According to Perna's 2002 research, there are

eleven critical components to effective early intervention programs. In the study, 25% of

programs working with low-income, minority, and first-generation students offered five of the

eleven criteria while only 6% of programs had all eleven (Perna, 2002). These results are

inclusive of the 1,110 programs who responded to the survey. As seen in Table 1, Building Steps

currently offers 8 components. An argument could be made for a 9th component of promotion

of rigorous course-taking. The organization currently support students in remedial math to later

encourage participation in more advanced math in college.

Components (Perna, 2002)	Building STEPS
Goal of college attendance	Yes
Goal of college awareness or college exposure	Yes
College tours, visits, or fairs	Yes
Goal of promoting academic skills	Yes
Goal of promoting rigorous course-- taking	No
Parental involvement component	Yes
Parent college awareness	Yes
Parent assistance with financial aid forms and involvement in student activities	Yes
SAT and ACT training	Yes
Tuition reimbursement or scholarship	No
Beginning by the eighth grade.	No

Table 1: Effective components in precollege programs

Stakeholders and Mission

While there are paid staff positions, Building STEPS also relies on Board leadership,

roughly 175 volunteers, and donors to provide unique experiences to Baltimore City youth. The

volunteers serve as writing advisors, juniors seminar hosts, tutors, participants in the

networking and career fairs, summer internship hosts, and guest speakers. Many of these

volunteers serve dual-roles and have a longstanding relationship with the organization.

The five paid staff members are tasked with operationalizing recruitment, high school programming, communications, logistics, college support, internship and career partnerships, and fundraising. These members include:

- **Chief Executive Officer** – Maintains corporate and institutional partners and maintains relationship with the Board to develop and expand on organizational strategy.

- **Director High School Engagement** – Plans, implements, and oversees all aspect of programing, including recruiting, STEM seminars, Internship and College Workshops. This individual is ensuring students submit complete college and financial applications and assists with all college decisions.

- **College Success Director** – Manages summer internship and math tutoring components of Summer Experience and maintains relationships as students transition from high school to college. This individual connects students to campus resources and provides ongoing support to ensure persistence. Through Backpack2Briefcase, this staff member ensures students are on track for college level career entry. This individual is an ongoing resource to Building STEPS Alumni Council.

- **Logistics Director** – Manages volunteer program and spearheads special project. Integrally involved with donor cultivation, Board development, and programming logistics.

- **Program Associate** – Supports all aspects of programming and direct services to students. Manages program and organizational data.

The staff, volunteers, donors, career partners, and Board are guided by the organization's mission to "equip our city's brightest students with the tools to propel them to college and career success" (Building STEPS, n.d.-c). This mission is accomplished by recognizing a student's ability and potential to create their ideal future.

To accomplish this mission, students must enroll *and* persist in the program. An alarming 29% of students leave the program during the onboarding phase. This capstone will provide recommendations to improve persistence rates.

Area of Inquiry & Problem of Practice

Baltimore City Public Schools are among the lowest ranked secondary schools in the country. As of the 2019-2020 school year, a discouraging 20 of 24 traditional Baltimore City Public Schools ranked in the bottom 25% of public high schools in the country (U.S. News and World Report, 2020). As many pre-collegiate programs aim to do, Building STEPS has created a unique opportunity to elevate a student's exposure to STEM careers and receive vital college application guidance. Nonetheless, they are losing too many entering high school juniors in the first few months of the program. This unfortunate statistic suggests that the organization is not able to support as many participants as they might otherwise.

Retention and persistence are not calculated from one singular factor. These rates must be viewed within the context of when a student exits the program. Students can leave for several reasons including:

- **No-show**: Student who does not start the program and did not otherwise confirm with Building Steps that they would not participate
- **Withdraws/Transfers**: Student who tells Building Steps they are not joining or a student who transfers to a non-partner school
- **Dismissal**: Student who leaves the program in junior or senior year in violation of attendance policy

Although the Building STEPS CEO has identified newcomer retention as a concern, chronological persistence paints a much more illuminating picture. Building STEPS already recognizes that 29% of students (on average) leave the program in the early stages. The rate of loss can be divided into distinctive stages of the program. A four-year cohort reveals an average size of 102 students. This is equivalent to the average number of students offered acceptance to Building

Steps each year. As shown in Figure 2, students can leave the program in one of five stages. An average 9% are no-shows. These are students who are accepted but do not attend any programming. Another 6% are lost via withdrawal or transfer. This category is relatively broad and can account for a variety of student circumstances. For example, a

Figure 2: Student dropout rates by stage

student transferring to a non-partner school within Baltimore City, a student transferring out of district, or a student who no longer wants to attend college and has lost the desire to participate. The largest percentage of students are lost to junior year dismissals. These dismissals are program-initiated and only arise after three event absences.
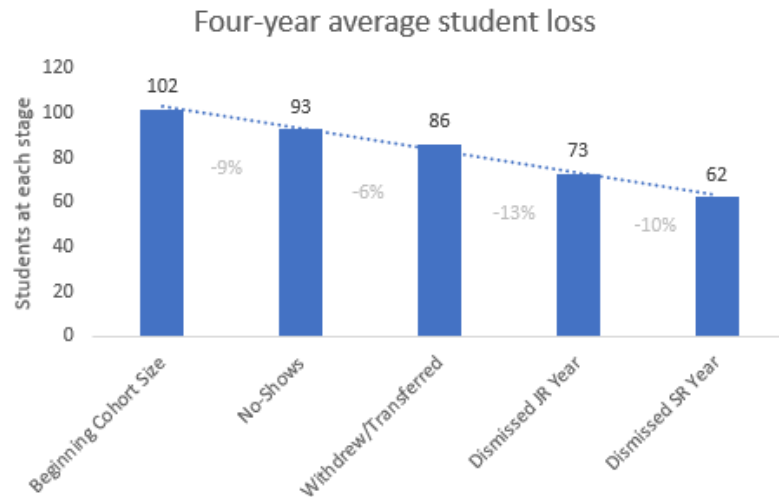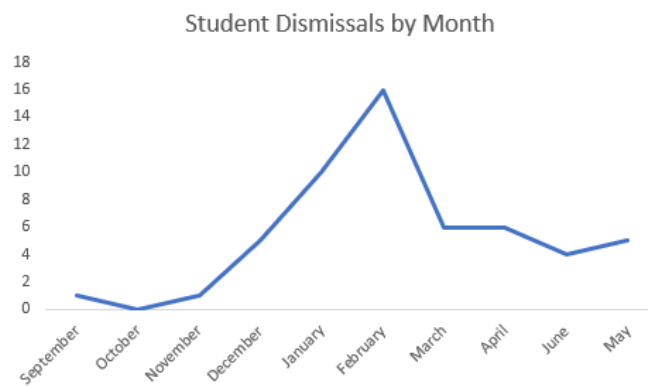

Figure 3: Junior dismissals by month

A closer look at the junior dismissals reveals that they are most prominent in January and February (Figure 3). This is not unexpected because programming only begins in August/September of the prior year. What this does indicate is that most absences occur in the fall semester which eventually results in the January and February dismissals.

In my initial conversation with the program, leadership had a few thoughts about these persistence rates. Many factors are beyond the organization's control. For example, a student who moves out of district is no longer eligible to participate because the program requires students to miss school and there are no agreements with non-city high schools. Even if students were eligible to continue, Baltimore was recently ranked as one of the top 10 worst traffic cities in the U.S. (Inrix, 2020). It is unlikely that students and families would desire, or have the means, to make the commute to in-person workshops and events.

A second uncontrollable factor is when students transfer to non-partner schools in the district. BCPS permits students to apply for the middle or high school of their choice at any point prior to the student's final year of high school. The enrollment window for currently enrolled high school students is open between mid-July and mid-August (Baltimore City Public Schools, n.d.-b). Depending on the date of the request, families may be notified of their transfer status as late as one week prior to the start of classes. There are a variety of reasons a student may request an intra-district transfer and many of the reasons are beyond the control of Building STEPS. Two of those reasons include the racial composition of a school and socioeconomic makeup (Phillips et al., 2012).

Another factor affecting student persistence is the current Building STEPS attendance policy (see Figure 4). Students are dismissed from the program after the third absence. Recall, from Appendix B, that there are seven junior events in the fall (this can fluctuate yearly). Student participation is critical to the success of the student and of the program, therefore, the attendance policy is designed to encourage students to engage early and often. This

requirement is also vital to ensure that students are forming relationships with staff who will eventually aid them in the college application process and beyond.

Junior Seminars Attendance Policy (9 Seminar Days, 1/Month)	
EXPECTATION: Juniors will attend all Junior Seminar Days. If you must miss a Seminar Day, you will notify us at least one day in advance.	
CONSEQUENCES	
1st Absence:	You will receive a formal letter reminding you of the attendance policy. **If you did not provide advance notice, you must turn in an Attendance Development Plan.**
2nd Absence:	You will receive another formal letter reminding you of the attendance policy.
3rd Absence:	You will be dismissed from Building STEPS.

Figure 4: Building STEPS Junior Seminars Attendance Policy

The aforementioned factors are the most obvious and currently measurable reasons students are not persisting. The organization also collects post-programming survey data. Building STEPS refers to these surveys as "evaluations." An evaluation is intended to measure engagement levels, interest, and possible revisions to programming. While these answers can be tied back to an individual student, the response rates are not necessarily conducive nor conclusive to gauge persistence issues. In a traditional year, the survey response rate hovers between 25% and 50%. The pandemic-era responses (fall 2020 and spring 2021) have increased to 60-75%. Although the High School Engagement Director was not questioned why the response rate improved so dramatically, one speculation is that students are constantly tied to technology in a remote environment.

If this problem remains unaddressed, there are several consequences for the organization. First, fewer Baltimore City youth will be supported. Certainly, high school administrators can play a role in mentoring students. But, with 119 district counselors serving

over 79,000 BCPS students in the 2019-2020 school year (Baltimore City Public Schools, n.d.-a), counselor caseloads are having a negative impact on college preparation (Woods & Domina, 2014). BCPS students are commonly going to be first-generation college students. The ability of these family members to guide prospective college students through the application and transition process is limited because families lack knowledge of the college selection process, entrance requirements, and the rising cost of attending college (Harper at al., 2018; Kirst & Venezia, 2004). This is not to say that high school personnel and family members are not contributing to success and educational attainment in some cases, but the literature demonstrates how indispensable early support is to at-risk urban youth.

A second concern is that the program does not have an open admission policy. Each year, roughly 80% of applicants are admitted. If Building STEPS loses even a handful of students early in the onboarding phase, there is no other occasion during which to recover those numbers when the school year has already started. This persistence issue deprives otherwise worthy students the opportunity to participate.

Literature Review

Persistence is measured using a variety of methods. The tactic shifts based on the population in question and the type of organization (e.g., school, business). This capstone has a specific focus on urban high school students exploring the STEM field. The following literature review will examine persistence in students interested in STEM, living in disadvantaged urban communities, racial minorities, and students ranging from middle school to college graduates. Mentorship and self-efficacy are both closely tied to persistence and emerge as consistent themes throughout the literature.

Several precollege programs are analyzed and compared to the current Building STEPS programming model. While many of these programs are federally funded and follow students through college with financial support, very few continue mentoring students to college graduation and beyond.

Lastly, onboarding experiences are analyzed from the point a person enters as an outsider and then progresses from newcomer to insider. The employee life cycle has important social and performance implications to reduce turnover and improve retention. Organizations welcoming newcomers may also modify procedures by generation or lived experiences. Each of these topics will have a positive contribution to inform this capstone's project design.

Persistence & Mentorship

Although this study isolated persistence issues within a precollege organization, persistence concerns are pronounced in many levels of education. Students may feel withdrawn as early as elementary school, but often do not drop out of high school until they have reached the legal age defined by their state (Lee & Burkam, 2003). One of the ways administrators, and the like, tackle educational persistence is through the prioritization of mentorship. As the literature indicates, students are often motivated by positive reinforcement from local mentors as opposed to day-to-day lived experiences (Duncheon, 2018). Positive mentorship experiences also lead to improvements in student self-efficacy. An improved sense of belief in oneself leads to more positive outcomes in a student's future and academic pursuits (Parikh, 2012).

Persistence is a broad and largely researched topic. This capstone centers on the early phases of participation in Building Steps, during which persistence is a strong indicator of completion. Additionally, the organization has a STEM component and works with urban communities. Therefore, the following literature review will seek to identify persistence measures within precollege organizations, STEM-related programs, and/or urban communities.

An overview of persistence research reveals inconsistencies with the use of the word. For example, persistence and retention are often used interchangeably. Consider these definitions from the Rhode Island Office of Higher Education (Education, 2001):

Persistence – The act of continuing towards an educational goal.

Retention – The percentage of a cohort that enrolled at the institution the following fall. Without careful consideration, these definitions are seemingly identical. Persistence and retention begin to diverge when you evaluate the lived experiences of the students. Persistence, though still moving towards an educational goal, also considers the students' social and intellectual development (Andersen, 2006). Despite the confusion among these definitions, this literature review and all subsequent references will use the word "persistence" as an indicator of a student's continued progression in an organization or in education.

Much of the literature on persistence analyzes high school or college persistence rather than the support systems that may aid students in their pathway to graduation. While some more recent studies compare success rates of college preparatory programs and their positive impact on education-based persistence (Knaggs et al., 2015), there is often no discussion of persistence within the support program itself. A 2018 study by Wesley College measured the effectiveness of a STEM mentorship program on retention of STEM majors, grade point

averages, progress towards degree completion, graduation, and attainment of STEM-related careers (D'Souza et al.). Over three years, the study revealed positive results in each of those categories as compared to STEM majors not in the program and Honors STEM majors not in the program. The researchers also discovered that mentorship contributed to STEM degree completion and helped eliminate some socioeconomic limitations students traditionally encounter when making progress within their desired field.

A similar 2013 study considered educational persistence in disadvantaged urban communities (Duran et al.). The FI³T Project encouraged high school students to interact with local college students and STEM-related industry experts. FI³T revealed a positive relationship between inquiry-based learning and the desire to pursue a college degree. This research provides a strong parallel to Building STEPS as it uncovers how urban students retain information and acquire or strengthen a passion to pursue a college degree. If inquiry-based learning is an efficient method for strengthening the pursuit of a college degree, then program design may provide some insights in assessing the early stages of the onboarding process for Building STEPS. Effective program design may have further implications for encouraging students to not only persist but remain engaged in STEM-related fields (Patel et al., 2015).

Longitudinal studies are common for studies of persistence and/or attrition (Bers & Smith, 1991). Many of these studies also utilize pre and post survey participation to evaluate change in behavior. A 2014 study measured how likely high school students were to pursue a degree in STEM after participating in an 8-week summer mentorship program (Salto et al.). The longitudinal component to the study revealed that 67% of the participants who graduated from college had pursued a STEM-related degree. Pre and Post participation surveys concluded that

students from the program had a stronger desire to pursue STEM research in the future. Both groups also experienced improvements in self-efficacy beliefs. This conclusion points to the significance of mentorship to STEM achievement.

Precollege programs

While STEM programs provide a subject-specific perspective, there are several federally funded college preparation programs that offer broader guidance to adolescents. The Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) is one such program with a focus to improve college readiness (Bausmith & France, 2012). These types of programs emphasize that urban students need to supplement knowledge gained in their classrooms with additional guidance from outside mentors (Parikh, 2012). A program like GEAR UP helps to underscore the importance of academic performance and foster improvements in self-efficacy. Other programs such as Upward Bound (U.S. Department of Education, 2019), are known to curb some of the cultural shock students may experience prior to starting college (Pulliam, 2016). These programs, in addition to other federally funded organizations, all have a mutual objective of supporting students to and through college.

Similar to Building STEPS, many precollege preparation programs are equally formatted with workshops aimed at improving self-efficacy. Although academics has been a primary driver in determining future academic and career success (Ishitani, 2003; Johnson, 2008), self-efficacy is often tied to student persistence (Multon et al., 1991; Robbins et al., 2004). Within STEM learning, self-efficacy is a critical component, if not the most important, to student persistence (Concannon & Barrow, 2010). While many other non-profit precollege programs have been

researched in the context of college persistence (Glennie et al., 2015) very few analyze program-specific persistence, which is the key focus of this capstone.

In addition to the numerous federally funded precollege programs in the United States, local non-profit organizations across the country offer similar practices. In Baltimore City, many students rely on the College Bound Foundation to provide otherwise missing precollege supports. Since 1988, the organization has helped tens of thousands of students turn their college aspirations into reality through scholarships and dedicated in-school specialists (College Bound Foundation, 2021). The Pathways Program in Kansas City, Kansas is another organization attempting to expand college exposure to students at a younger age (Urban League of Greater Kansas City, n.d.). A one-week summer precollege preparation program aspires to connect underrepresented students and their families to the idea of higher education (Ng et al., 2014). Through a series of interactive workshops, students improve self-efficacy by developing a better understanding of how to attain a college degree. Family members have also been shown to enhance their understanding of student achievement and its relationships to college acceptances.

The following research represents a significant addition to the literature on precollege preparation programs: the role of family members. While it is certainly important for the college bound student to understand their worth, family members have consistently proven to offer valuable motivation and encouragement in the college application process (Malone, 2013). However, simply encouraging students to apply to college is not sufficient support. Family members must also understand the value in encouraging the student to maintain an appropriate academic record in high school. After all, academics are a major contributing factor

to gaining college acceptance. Although the parent role has been researched (Ng et al., 2014; Tierney, 2002), there is much to be gained about the importance of the family member in student outcomes.

While family members play a major role in college selection (Roksa & Deutschlander, 2018), other mentors must carry some of the burden to improve the student self-efficacy that urban youth require to even consider a college pathway (Somers et al., 2016). It is not enough to articulate that a student should go to college, the student must also believe they are capable of this pursuit. The high school curriculum can provide a space for students to learn about the importance of college, but there must be additional reinforcements. Studies have shown that advice from mentors outside the family and school may be stronger influencers if involved prior to starting college research (Duncheon, 2018).

Mentorship is a proven component in establishing success for urban college bound students (Seelig, 2011). African American males specifically identify that "self-image, self-perception, and the perception of others are important" (Huff, 2016, p.116). These are all concepts that mentors must prioritize with their mentees in the early stages of programming. This same study revealed that peer support and social networks can offer additional supports to guide a student in their academic pursuits. A program like Building STEPS has enormous potential to provide this much-needed mentorship, particularly as it relates to their five-pronged programming model. Each step of programming aims to provide additional support systems within the context of their life stages (e.g., high school, college, beyond college).

Onboarding

As already addressed, persistence measures are a focus of this capstone, but only when couched within its relationship to onboarding. If mentorship is provided too late in the process, persistence may not be achieved. Likewise, if efforts to endorse self-efficacy are delayed, students may not have the belief in themselves to even pursue a precollegiate program. For Building STEPS, onboarding refers to the time a student is first contacted as an accepted student through the first fall semester of the program. Human Resources Departments, on the other hand, have wildly different definitions of onboarding. Some describe onboarding as the period between the start of employment and the point productivity begins (Snell, 2006). Others see onboarding as "the process of helping new hires adjust to social and performance aspects of their new job" (Bauer, 2010, p. 1). Both definitions speak to the early stages of employment but prioritize a different purpose and outcome.

Despite the onboarding literature predominantly addressing employee experiences, there is an interesting parallel to Building STEPS. Several studies confirm that newly hired employees are more likely to leave within the first three months (Acevedo & Yancey, 2011; Ellis et al., 2017; Smart, 2012) or that 22% leave in the first 45 days (Harpelund, 2019) or that 4% never return after their first day (Moscato, 2005). There is undoubtedly a key ingredient missing during the onboarding phase for organizations; Building STEPS is no exception.

In the employee lifecycle, some workers leave for lack of hope, lack of trust, lack of worth, and lack of competence (Branham, 2012). On the contrary, some employees are "happy quitters" with positive experiences at the current employer but see greater potential for themselves at another firm (Gajendran & Somaya, 2016). This debunks the common claim that

people quit bosses not jobs (Ingram & Cangemi, 2012) or that workers quit in response to lack of appreciation (Sand et al., 2011). Each of these claims present differing perspectives on employees and their desire to leave an organization at any point in their career. For the early stages of a new job, it is a slightly different argument.

Organizations that prioritize onboarding recognize that the newcomer transition can be daunting. There is fear of acclimating to the social environment (Klein et al., 2015), acceptance of new policies, and general uncertainty about the impending experience. Companies recognize that turnover can be high and rather expensive (Phillips & Connell, 2003), thus they opt to provide a positive influence to encourage future and continued success. Studies within the last fifteen years have evolved to distinguish between onboarding best practices by generation. For example, millennials desire vibrant visuals, interactive activities, and group think (Ferri-Reed, 2013). Generation Z, born after 1995 (Chillakuri & Mahanandia, 2018; Lanier, 2017), are the newcomers to the workforce and prefer self-directed and independent learning (Chillakuri, 2020). The generational onboarding studies commonly use the interpretive research lens to analyze findings. This approach allows the researcher to consider critical subjectivity when assessing social experiences (Lincoln, 1995).

A very recent study mirrors the program design, age group, and intended outcomes of the Building STEPS study. The 2021 qualitative study examined student experiences in a summer bridge program between the end of senior year and start of college (Turner et al.). A major component to the study centered on the student's mindset prior to, and immediately following, enrollment. The overarching goal of the study was to understand the lived academic and social experiences of students in the program. The researchers used organizational

socialization to frame the responses and determine if the program influenced a student's undergraduate experience. At the time participants were interviewed, they had all graduated from college and were either employed or pursuing additional education. The outcome revealed a positive relationship between the bridge program, the student's college experience, and their ability to persist to graduation.

The Turner et al. (2021) research linked onboarding to socialization, much like other precollege programs have demonstrated. The preceding research also illuminated the interrelatedness of mentorship, persistence, and self-efficacy. Effective precollege programs can impact a student's academic trajectory, but they are proven to offer so much more. Programs that provide mentorship are working to promote and improve self-efficacy. Support systems are also critical and sought after in urban communities where mentorship is tied to retention and college graduation (Mitchell & Stewart, 2012). Mentorship can also lead to persistence in the early stages of education.

Prior to 1980, research assessed the entry process for individuals from two perspectives (Figure 5). First, a consideration on how to reduce involuntary or voluntary turnover (Mobley et al., 1979; Muchinsky & Tuttle, 1979). These researchers attribute turnover to someone experiencing either unrealistic expectations (Bray et al., 1974; Wanous, 1977) or unmet expectations (Dunnette et al., 1973; Katzell, 1968; Ross & Zander, 1957). Unrealistic expectations are a byproduct of embellished job descriptions and outcomes from recruitment. An unmet expectation is simply the difference between the expected and true outcome of a role. The second research perspective, organizational socialization, will form the basis for one of the conceptual frameworks. This critical component to onboarding describes the stages

individuals face as they decide what organization to enter, interpret the information gathered

in the early stages of entry, and consequently how realistic job previews improve persistence

(Wanous, 1977).
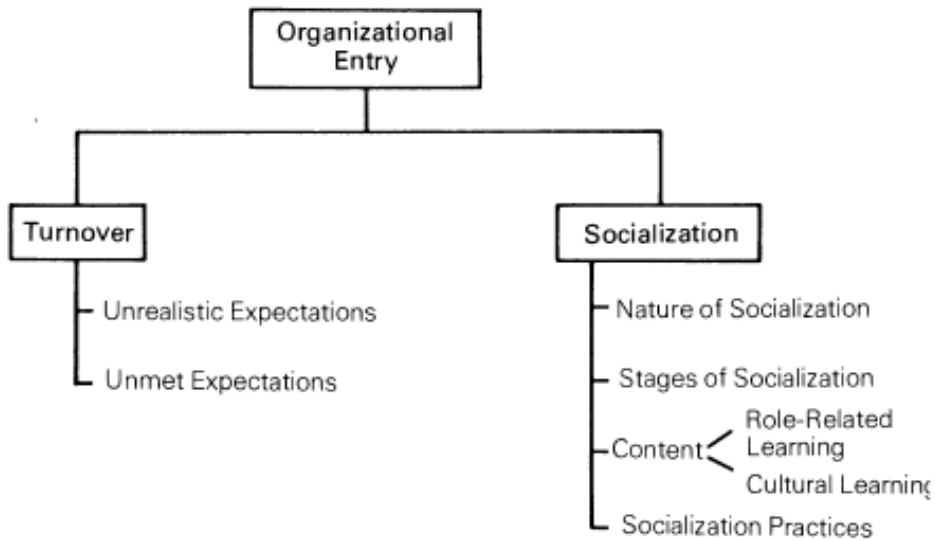
Figure 5: Organizational Entry (Louis, 1980)

This capstone is specifically focused on the onboarding period of precollege programs.

During this stage there are implications to be considered when welcoming different

generations. Socialization and anticipated socialization are also key components when

developing effective newcomer models. Figure 6 further demonstrates the connection each of

these subjects has on precollege preparation programs. While this is a rather simplistic

representation, it confirms that these factors cannot work in isolation.
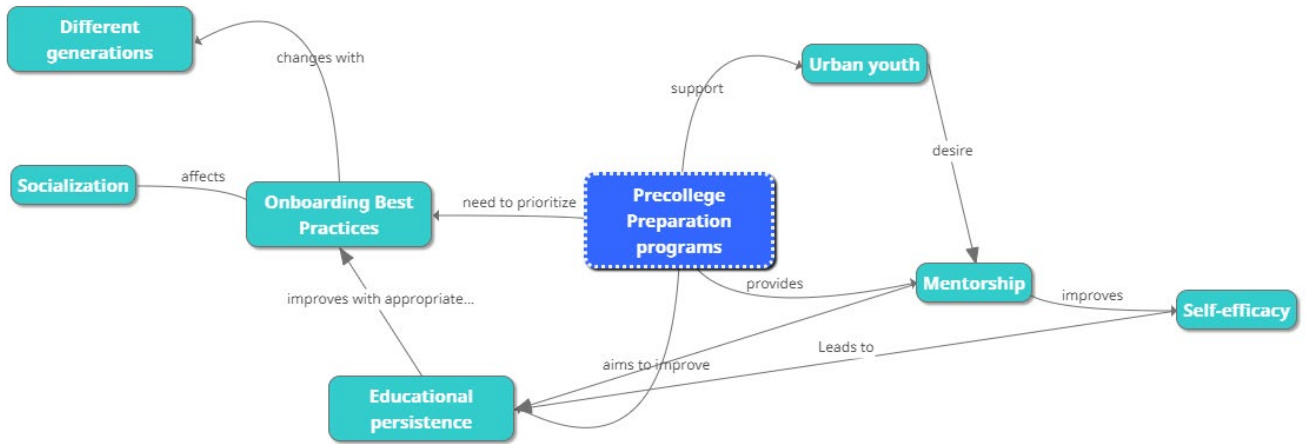
Figure 6: Literature Connection

Conceptual Frameworks

Organizational Entry: Turnover and Socialization

Organizational socialization is most often associated with employees as they are recruited, accept a position, and acclimate to the new culture (Brown, 1985; Falcione & Wilson, 1988; Feldman, 1981). Figure 7 illustrates the stages an individual encounters as they progress from outsider to newcomer to insider. The Anticipatory Socialization stage is where outsiders

formulate expectations of their role and experiences (Merton, 1957).
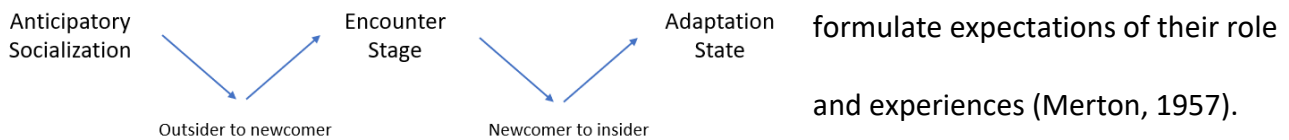
Figure 7: Stages of Socialization

Merton's research will provide the framework to understand this socialization process that is critical to organizational entry. As individuals enters the organization, they enter the encounter stage where they can assess the anticipated outcome versus the reality (Van Maanen & Schein, 1977). Hughes (1958) uses the term "reality shock" to describe surprises when entering the organization. The last phase, Adaptation, only occurs when an individual persists for several months.

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Sense Making

In 1980, Louis released a model to explain the experience of a newcomer. Figure 8 describes each of these stages in a mostly linear fashion. Notice that this model does not specifically address Anticipatory Socialization. The Detection stage is essentially the start of the Encounter Stage as described in the Socialization model. Individuals encounter change followed by contrast and/or surprise as they acclimate in those first few weeks and months. It is at this stage where individuals confirm if their scripted version of the experience matches the actual outcome. Individuals often enter situations that challenge their preconceived notions. If the reality conflicts with a predetermined assumption, people begin developing explanations for the differences. "Retrospective explanations help to resolve tension states by restoring equilibrium, although in a new configuration" (Louis, 1980, p. 240). The procedure we use to diagnose the discrepancy between the predicted and the reality is "sense making" (Weick, 1995).

Figure 8: Sense making in organizational entry (Louis, 1980)

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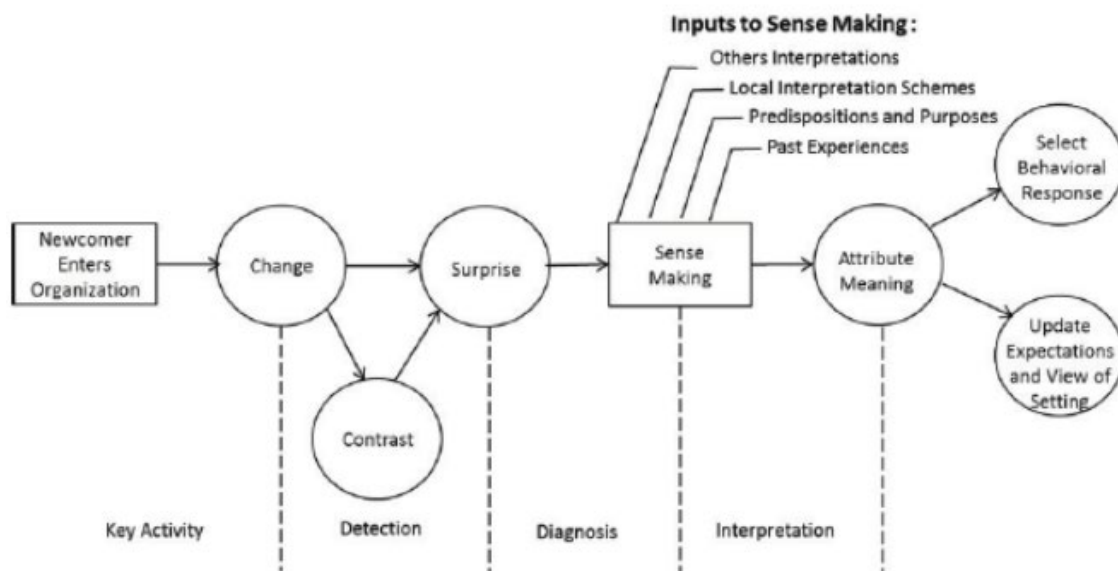Sense making during organizational entry can result in a more positive relationship between the newcomer and the organization (Bauer et al., 1998). Conversely, it can result in turnover for members who experience unexpected change and surprise. Organizations that prioritize socialization and are clear about expectations, see higher levels of social integration and task mastery (Chan & Schmitt, 2000). In addition to prioritizing socialization to help newcomers through the sense making process, organizations should consider who is involved in socialization during this early stage. A 2011 study provides empirical evidence to support both the supervisor and coworker's critical involvement in the socialization process, given the tendency of newcomers to engage in dialogue with both parties (De Vos & Freese). In relation to precollege programs, we may assign the role of supervisor to the advisors and coworkers to current or other new participants.

Conceptual Frameworks in Practice

Organizational entry, and more specifically socialization, is commonly used in education research to evaluate how a student enters a program or college and the effect on academic and social outcomes. This has important implications for Building STEPS as they bring students together from up to 15 different high schools. Unless the student knows a past or current participant, they enter the program with little awareness of the lived experience. The recruitment process for Building STEPS provides a sampling of expectations, but it is up to the imagination of the student to interpret how they will acclimate. This mirrors the recruitment process for prospective college students. Admissions recruiters create engagement opportunities like campus tours, meet & greets with current students, and overnight visits. None of these events can truly account for the way a new student will transition to college. In

the Turner et al. (2021) example, organizational socialization provides the framework to

evaluate education and social outcomes. While that study measured summer bridge outcomes,

other researchers have used this framework to assess the transition to college without the aid

of a precollege program (Chaskes, 1996; Yarbrough & Brown, 2003).

While socialization during organizational entry (Merton, 1957) shapes how a student

may anticipate their new experience, Louis' (1980) newcomer experience model will play a key

role in evaluating how students use sense making to justify change and surprise during

onboarding. Though separated by decades, these conceptual frameworks are closely connected

as individuals progress through the various stages of entry. Figure 9 was adapted to synthesize

chronological organizational entry and the sense making that occurs throughout the process.

During the interviews, students were asked detailed questions regarding expectations at

multiple stages of the recruitment and onboarding process. These answers based on the

adapted framework in Figure 9 will attempt to reveal how students interpret the program and

make sense of the expectation versus the reality.
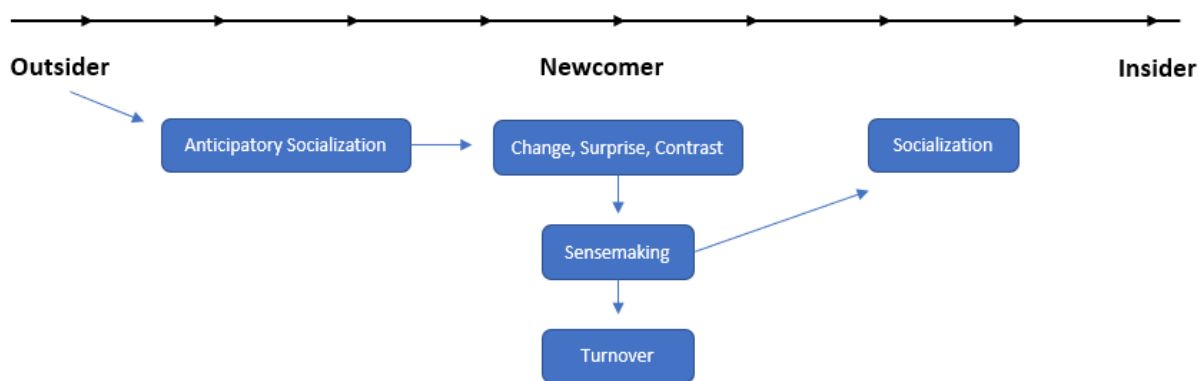
Figure 9: Conceptual Frameworks in practice

Research Questions

This study examined how students perceive and then react to the early stages of the

Building STEPS program. As mentioned in the conceptual frameworks, newcomers to the

organization move through several emotional and social stages during their transition. As they

progress through each phase, individuals process information based on what they anticipate

and then sense make as they experience the lived reality. To address the newcomer experience,

sense making, and the desire of the organization, this capstone will seek to answer the

following question and sub-question:

> **Question 1:** What are student's experiences and perceptions during the onboarding
> phase of precollege programming?

>> • **Sub-question 1**: To what degree does the program meet student
>> expectations?

Both questions will be evaluated within the context of the adapted conceptual frameworks.

Organizational entry will speak to the anticipated socialization that influences the onboarding

phase in addition to a student's met/unmet or realistic/unrealistic expectations. Meanwhile,

sense making contributes to the way a student reconciles their preconceived notions versus the

lived experience as an outsider and newcomer.

Project Design

Data Collection

This mixed methods study captures qualitative data through a phenomenological

research lens explain. In other words, through the lived experiences of the students in the

program. Data was collected through one-on-one interviews, observations, and document review. A small quantitative component was also utilized to extrapolate chronological dropout rates. Each of these methods was designed around the conceptual frameworks and research questions.

Qualitative

One-on-one interviews (students): Stories are a powerful tool to capture behavior, expression, and attitudes. In a 1985 study, Brown discovered a connection between storytelling and organizational socialization. As individuals progress through socialization phases, they use storytelling to sense make (Brown, 1985). Cohen and Mallon (2001) confirm a similar finding: that an individual's career is better understood through storytelling and consequently provide insights into sense making. A student's voice cannot be minimized when capturing a true lived experienced. "Voices are invaluable and provide a unique perspective, often left out of the current literature, which helps us understand the lasting impact these programs have on student success" (Turner et al., 2021, p. 13). One-on-one interviews were the most desirable method to create space for these stories and student voices.

In the fall of 2020, Building Steps sent a study recruitment text to 10 current or past Building STEPS students age 18 and over. The Director of High School Engagement confirmed that these students were identified as a good fit based on their likelihood to respond and engagement in the current cohort. Seven students agreed to participate. Each student was asked to choose a date and time for a 30 to 45-minute interview. Six students submitted the interview date request form and all six completed the interview (Appendix B)

All interviews were conducted via Zoom with interviewer and interviewee cameras off. Students were told in advance of the interview that cameras would be turned off for the privacy of the student and to preserve Internet bandwidth. Students were also informed that their answers would be anonymous but not confidential. Each interview was recorded with the student's permission. Voice transcriptions were automatically generated by Zoom and available to the researcher at the conclusion of the interview.

All student interviews were semi-structured (questions available in Appendix C). The connection of the questions to the conceptual frameworks is identified in Table 2. Each question was asked in sequential order to capture a student's experience as they progress through the newcomer model and phases of socialization. The accumulated information was used to answer the primary research question to determine how students experience and perceive the onboarding phase. Questions 3, 5, 6, and 8 supported the research sub question about student expectations.

Question #	Topic	Connection to Conceptual Frameworks
Q1	Learning about program	Anticipatory Socialization
Q2	Applying to program	Anticipatory Socialization
Q3	Experience on first day	Encounter Stage & Detection
Q4	Memorable onboarding experiences	Encounter Stage & Interpretation
Q5	Concern to leave	Sense making
Q6	Met/not met expectations	Sense making
Q7	Mentorship	Adaptation Stage
Q8	Negative feedback	Sense making
Q9	Describe the program	Adaptation Stage & Interpretation

Table 2: Interview question topics and their connection to the conceptual frameworks

It is important to note that all six interviews were with current high school or college students with an active status in the program. In other words, they all persisted. Students who left the program were not accessible for interviews.

One-on-one interview (staff): The High School Engagement Director was interviewed to better understand the recruitment and onboarding process. These questions (see Appendix C) were less connected to the conceptual frameworks but rather to verify the mission and successful/failed attempts with the problem of practice. This staff member also served as a liaison for follow-up questions after quantitative data was collected.

Observations: Prior to fall 2020, observations would have been conducted in and around the Baltimore Metropolitan area. However, the global pandemic forced Building STEPS to move programming to a virtual modality. Therefore, all program "observations" were recordings of events. The researcher did not have access to view the chat conversations nor were all event recordings available. However, transcripts of the presentations and the video recording was accessible.

Non-participant observations (i.e., no active participation from the researcher) were factored into this study to gauge the energy and participation levels of the staff and participants, to understand the topics discussed, and to watch interactions between staff and participants. The switch to virtual programming was an unfortunate challenge as students used Zoom to attend workshops, while prior cohorts attended the same sessions in person. Although the recorded observations were able to capture the general topics juniors would encounter, the levels of participation and cadence of each event did not follow the traditional setting.

Journaling was used to capture conversations, topics, and understandings for each event. When the share screen feature was used by the facilitator, no students were visible on camera. When the screen was not being shared, all students with cameras on were visible to the researcher. In fall 2020, there were six junior programs; two were observed.

Recording Available	Date	Event
	August 19	Welcome Party
	September 15-17	Recruitment Sessions
	October 7	Orientation
✓	October 14	Seminar 1: Lab & College timeline discussion
	November 5	Study Hall
	November 18	Seminar 2: Lab & summer program/internship discussion
✓	December 2	Seminar 3: Career Symposium

Document Review: The last chronological stage of the qualitative data collection was to obtain organizational records. The following documents were made available:

- Past event student survey responses – Survey responses serve a similar purpose as interviews. The idea is to gain a better understanding of a student's met/unmet expectation, perceptions, and feelings about an event. Three years of post-programming survey data were available for a total of 37 surveys submitted by approximately 400 students. The specific survey questions varied by year but generally asked students about program appeal, concerns, and takeaways (Appendix D). The structure of the surveys allowed for short answer responses and other questions were presented on a Likert scale.

- Acceptance letter – Example of a Building Steps junior acceptance letter with a congratulatory statement, steps to accept the offer, and program contact information.

- List of 2020-2021 programming – Available in Appendix C.

- Statement of Commitment – This document is one component within the Building Steps application. This page of the application asks students to submit their contact and biographical information, parent/guardian information, and sign a statement of commitment where students and their guardian agree to abide by the attendance

policy, accept that programming will require school-day absences, and acknowledge that transportation is only offered from certain high schools.

- Senior College Handbook – This five-page PDF redefines what students can expect as seniors in the program. The document includes a preview of senior year topics, the programming schedule, new attendance policy, college application timeline and action plan, and ways to remain proactive during the college application process.

- Attendance Policies – Two attendance policies were made available for review: junior and senior year. The junior year policy is available in Figure 4.

Quantitative

Building STEPS provided attendance rosters for the last five entering cohorts. The Microsoft Excel spreadsheet (not included in Capstone to protect identify of students) includes a summary of total applicants, acceptance rates, beginning cohort size, and dropouts by type. This document also shares student-level information for each cohort. This includes student name, high school, GPA, status in program (e.g., current, alum, dismissed) and attendance per event.

The document summary was helpful to understand overall persistence by cohort. The individual student information, however, was used to examine patterns regarding dropout timing and any relationship between the high school a student attends or their GPA at the time they applied to the program.

Data Analysis

One of the goals of this inquiry was to assess the reason students do or do not persist, particularly within the early stages of the program. The onboarding phase is not isolated to one short time period. In fact, most students start as an outsider in May and then transition to the newcomer stage in August where they remain until December. This creates an eight-month window for potential onboarding dropouts. To assess *when* students are most likely to drop out, attendance rosters for five years of program attendance were analyzed. Table 3 provides an example of the attendance roster where "U" indicates an unknown absence and a total of three result in a dismissal. The most recent entering cohort data, 2020-2021, was discarded for several reasons. First, no students were interviewed from this cohort so it would be difficult to triangulate these results with student interview responses. Second, this group has only participated and been onboarded via virtual programming rather than in-person experiences. Third, the cohort has only participated in the program for one year so there is missing senior year attendance.

Name	High School	GPA	Status	Dismissed	Sept	Oct	Nov	Dec	Jan	Feb
Student #1	School	3.78	CURRENT		1	1	1	1	1	1
Student #2	School	3.14	DISMISSED	JR - Jan	1	U	U	U	DISMISSED	DISMISSED
Student #3	School	3.44	NO SHOW		NO SHOW	NO SHOW	NO SHOW	NO SHOW	NO SHOW	NO SHOW

Table 3: Example of attendance roster

Using an average of the four entering cohorts prior to fall 2020, student absences were analyzed to the point where a student left the program. The average starting cohort size was first identified. Then, students were evaluated based on the reason they left the program. The

primary reason for departure were students did not attend programming, students who withdrew or transferred to a non-partner school, and students dismissed for attendance policy violations.

This data contributes to the findings as it reveals when students are most likely to drop out. Prior to this study, Building STEPS understood that 29% of students did not persist in the early stages. This quantitative analysis points to the most concerning time periods where additional efforts would be most impactful. Eight months of onboarding is a substantial window, and several changes could be made within each of those months. Thus, pinpointing the most critical times will result in a greater return on investment for Building STEPS.

The attendance roster was also used to determine possible relationships between student persistence by school and GPA. Once again, the same four cohorts were used to determine average GPA of each cohort, average GPA of the dropouts, average GPA from each high school, and average GPA of dropouts from each high school. Using this same data, student dropout rates per school were measured in relation to total number of participants per school. Color scales were then overlayed to determine the highest percentage of dropout rates within each high school. Each of future references describing specific secondary school outcomes contains anonymized high school names. The true name of each high school will be shared in the organization presentation to assist with actionable recommendations.

The GPA averages and high school of origin are influential in that both provided clues to possible correlations between persistence and a student's GPA or school. Rather than provide recommendations in aggregate, this data helps to further segment populations that require unique recruitment or onboarding tactics.

While the quantitative data illustrates numerical relationships, the qualitative data provides the narrative to support the lived experiences. In college admissions, professionals make the claim that enrollment predictions live at the intersection of data and emotion. The same notion can be applied to this study whereby an examination of a student's likelihood to dropout/persist can be measured through a combination of quantitative data and student chronicles.

Student interviews and surveys were coded independently and then overlayed according to related themes. Prior to analyzing interview content, captioning errors required correction. Although Zoom automatically transcribes recordings, a 2018 article quotes an 89% accuracy with speech-to-text services (Dame, 2018). Fortunately, the Zoom platform allows users to review the recording and transcript side-by-side to edit and resave the .txt file. All six student interviews were reviewed and corrected. Once the .txt files were regenerated, each interview was read twice to begin identifying themes. Each new theme was color coded within the .txt file and then added to a spreadsheet to evaluate overlap between students. Many themes emerged from uniform answers to the same interview questions while other themes were present within only one student interview. Additional themes were discovered by analyzing word frequency to depict keyword metadata.

Deductive codes were easy to identify because they were informed by the conceptual frameworks of organizational entry and sense making. These codes include anticipated socialization, socialization, newcomer experience (encounter stage), change, surprise, and interpretation. Additional themes emerged within student interviews and survey responses. These include human personality, peer reaction, program praise, external support systems,

ambition/motivation, policies, virtual experience, lessons learned, college emotions, and mentorship.

After reviewing the interview transcripts, the survey results were coded via line-by-line analysis. Of the 37 junior and senior year surveys, only the 18 junior-year programming surveys were used because they represented the onboarding phase for the program. First, the surveys were evaluated using the deductive codes. Then, key words and phrases were added to previously identified inductive codes. No additional codes emerged from the surveys.

Once the codes were determined, themes were then detected to further analyze the relationship to the research questions. These themes were also helpful in establishing findings because they reinforced overarching narratives and confirm newcomer experiences with sense making and socialization. Table 4 displays each code, definition, and coinciding theme:

Code	Definition	Descriptions and Examples	Conceptual Framework
Newcomer experience	How students transition from an outsider to newcomer within the encounter stage	Believe, Nervous, Comfortable, Belonging	Sense making
Change and Surprise	Adapting to the new experience in an unanticipated (surprising) way	Hesitant, Unexpected, Concerning	Sense making
Anticipated Socialization	The preconceived notions outsiders have regarding how they will be received by the organization	Expectation, Timidness, Uncertainty, Lack of awareness	Organizational Entry
Socialization	Process students encounter when they first join the organization and meet new friends and organization partners	Shy, Scary, Nervous, Easy, Fun, New friends, Bonds	Organizational Entry
Interpretation	The way students process new situations based on predictions or past experiences	Acceptance, comfortable, calming, reality	Sense making
Human Personality	Introverted or extroverted students and their different desires and lived experiences	Nervous, Challenging, Difficult, Willing, Comfortable	*Informed by the data*
Peer reaction	Reactions from friends who did not join the program	Join, Fear, Afraid, Misunderstood, Regret	*Informed by the data*

Program praise	Ways students acknowledge the added benefit Building Steps (as an organization) and staff provide to the student's life and college process	Believe, Challenging, Help, Guidance, Motivate, Opportunities, Thanks	*Informed by the data*
External Support systems	Individuals outside of Building Steps who provide support and care to the student	Counselor, Family, Teacher	*Informed by the data*
Ambition & Motivation	Newly acquired sense of enthusiasm for future ambition	Commitment, Believe, Willing, Motivated, Future, Life	*Informed by the data*
Policies	Perception of Building Steps policies according to the participation agreement students sign. The concerns and praise they provide for these policies.	Attendance, Hard to do, Willing, Succeed, Challenge	*Informed by the data*
Lessons learned	New knowledge/skills obtained through Building Steps	College, Careers, Internships, College applications, Learned	*Informed by the data*
College emotions	Sentiments expressed about the college application process	Nervous, Excited/exciting, Ready, Hopeful, scared, terrified, help	*Informed by the data*
Mentorship	The guidance students receive from Building Steps through the career exploration and college application process	Mentor, Guidance, Forever, Transforming	*Informed by the data*

Table 4: Qualitative Data Coding

Findings

The research questions examine how students experience and perceive the onboarding phase and to what degree student's expectations are met. Both questions were answered through the collection of student rosters, attendance records, interviews, observations, surveys, and other documents provided by the organization. In addition to the research question results, several other illuminating findings were discussed.

Finding #1 – **Students were hesitant and uncertain of the experience prior to commencing programming yet expressed curiosity.**

Students faced a range of emotions in the months between their acceptance and the first event of their junior year. Feelings ranged between nervous, scared, afraid, excited, and ready. Most of these feelings were from lack of understanding the commitment. In fact, all students used a variation of the phrase "wasn't sure" to describe what they expected before the first event. They were not certain how they would feel, if they would make friends or if they would belong.

When asked to recall the recruitment process that occurred prior to programming, only one interviewed student remembered having prior knowledge of the program. The other five first learned about Building STEPS during the information session held in their high school. This was a pivotal moment in the process. One student described the session as "eye-opening" and another as "refreshing." Student B said the information session presenter talked about a "supportive environment", but it was difficult to visualize what that meant. In order to make sense of what they *thought* they were hearing in the session, students developed a hazy picture of the possible experience. They tried to envision who they would meet, how their future would change, and how difficult it would be to balance current obligations with the new commitment.

In a follow-up conversation with the High School Engagement Director, she mentioned that for many years the information session included basic facts about Building STEPS and what the students would experience. Several years ago, the format shifted to include:

- Characteristics of college-readiness
- Benefits of earning a college degree
- Building STEPS contribution to student success prior to and during college
- Problems students face in college and how Building STEPS helps them navigate

- Programming components

Despite this shift to a more persuasive presentation, students still reported feeling uncertain of how their life could change with the addition of this program. One student described it as "confusing but intriguing."

As the school year began and students commenced with orientation and other programming, these feelings of uncertainty began to fade. The first student interviewed, Student A, talked about an "overwhelmingly positive sense of connecting." This student used phrases such as "sense of belonging" and "they cared right away." It was evident that the interviewed students had very few expectations prior to programming, but quickly formed an affinity for the organization. These findings confirm the literature on sense making and the role it plays in retaining a newcomer. If someone acclimates to their environment, through sense making of the new experience, they are more likely to persist. Meanwhile newcomers who experience change and surprise from lack of understanding expectations are more likely to leave.

It is clear that students who persisted had mixed expectations at the start but quickly learned how the program could be impactful. Students who persist show a naturally curiosity with phrases like "I wasn't certain, but I trusted it." Berlyne's (1966) typology labels two types of curiosity: specific or diversive. Building STEPS students exemplify a diversive curiosity, or a broader and inquisitive mindset for something new. A diversive curiosity has also been linked to positive newcomer adaptation and the ability to productively sense make (Harrison et al., 2011). Although there is hesitancy, the sense of curiosity prompted students to reconcile their anticipated feelings through sense making. For those who have no prior experience to provide

the sense making structure, students use curiosity to guide them through unexpected situations and lean into the process.

Peers of current students, on the other hand, rejected the idea of the organization early in the process. Hesitancy begins at this stage and at times cannot be overcome. Although they may have attended an information session, their interest was not piqued, and curiosity was lost early in the process. In order to adopt and maintain the curious nature, desires should not arise from epistemic motivation but from organic interest (Schmitt & Lahroodi, 2008). In other words, the students should hold a natural curiosity rather than a deep desire to grasp meaning from the onset.

To expand on the peer experience, it was astonishing to hear nearly ever interviewed student talk about the regret their peers expressed after declining to apply to Building STEPS. Two students remarked that *"A lot of students didn't join who should have. I guess they were scared"* and *"Two friends didn't join because they didn't get it and then people regretted not joining."* These responses were prompted by interview question 6 which asked students about program expectations. All six students said the program met their expectations, which is not surprising because these students are either still enrolled or alumni of Building STEPS. What is surprising was how many students commented on friends or peers who neither comprehended the program nor understood the impact it could have on the college application process and their life. These acquaintances felt a sense of regret after witnessing the transformation their friends experienced.

This finding regarding hesitancy, lack of expectation, and curiosity speaks to the importance of the onboarding phase which includes the first recruitment meeting. As finding 2

will confirm, an overwhelming majority of students are pleased with the program by the end of fall programming, which implies Building STEPS is accomplishing their mission. However, not all students are gaining a sufficient understanding of the process from the first interaction nor a rich understanding of the expectation and outcome.

Finding #2 – Students report mostly positive responses to programming and a positive outlook on the college application process.

The interviewed students had GPA's ranging from a 3.0 to 4.0 and attended four different high schools (see Appendix C). These students were interviewed as either high school seniors or current college students. Although all were confident in their recollection of the onboarding process, a few were unable to remember the names of students or staff they met or the specific organizations and locations they visited. However, they all recalled the feelings and emotions they felt when progressing from outsider to newcomer to insider.

When questioned about fall programming, Student F remarked "*I wasn't familiar with my surroundings, which was scary, but they always made it clear why we were there. It motivated me.*" This comment was followed by an explanation for the nervousness felt before starting the program. The student generally understood the purpose of Building STEPS but was further convinced of the importance after participating in two or three fall programs related to STEM careers and the college application process. Student C recalled a similar experience with programming where *"it was all positive vibes and made it easy to learn about science and the college stuff."*

The junior seminar surveys asked students to comment on what they enjoyed or did not enjoy from that event. Most students submit these responses on the bus on the way home

from programming so that results were able to capture the student's immediate reaction to the program. An overwhelming majority of responses were either positive or neutral. The only constructive feedback students provided was in response to the question "How would you improve the day" and "share any concerns/questions that you have for us." Most students left the question blank or indicated no concerns. Students who did respond to the question had varied responses. For example, a desire for less walking on campus tours, more time to eat, more speakers, and more interactive activities. Even students who shared constructive feedback tended to rate the overall program as favorable.

The positive responses used words like learning, exploring, interesting, educational, informative, amazing, and helpful. In a 2019-2020 survey, students were asked to comment on their experience so far in Building STEPS. These responses were also variable but mostly positive and included quotes such as:

"My experience with Building STEPS so far is really good"
"My experience in Building STEPS has been a up and down experience"
"So far it is very fun and educational"
"It has been very useful, informant, helpful, and fun"
"Building STEPS has been very efficient with its exposure to many unknown career opportunities"
"So far this year my experience has been very boring but also beneficial"

These responses were collected in January of 2020 after students participated in the fall events. The answers speak to the generally positive feelings students have about the program as they discover their STEM and career interests.

Most surveys asked students to rate their overall event satisfaction. The Likert scale shifted between survey years but was standardized for research purposes to capture overall satisfaction (Figure 10). On average, students rated each program a 4.3 out of a high score of 5. Over 80% of students rated each event a 4 or 5. Some of the students who rated events a 1 or 2 typed favorable comments to other questions. Therefore, some students may have inadvertently inverted their intended score.

In the March 2021 survey, students were asked to provide advice to someone considering joining Building STEPS. Common words and phrases included:

"just join"   *"very helpful"*   *"get you ready for college"*   *"it's great"*

"opportunity"   *"open minded"*   *"don't be scared"*   *"learn"*

Most responses can be interpreted as positive and encouraging of participation. No blatantly negative responses were shared, although two students wrote, "be prepared" and "get ready" with no additional commentary.
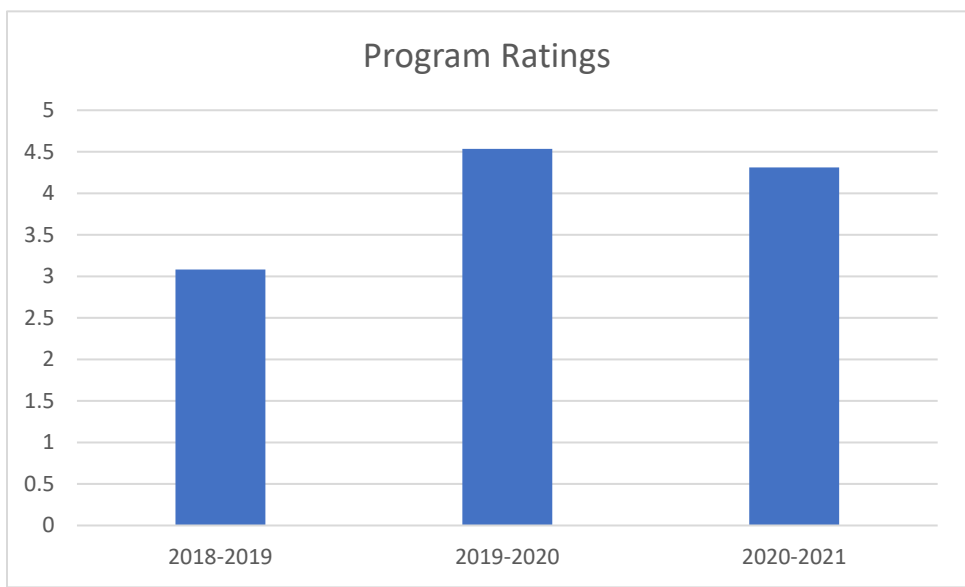

Figure 10: Survey ratings by year

Another survey in 2021 asked students to identify one word describing their feelings about the college process. Sixty-nine students responded to this

question. All words used more than once are captured in Figure 11. The most common word

was excited/exciting. All positively correlated responses are shown in green, neutral in yellow,

and negative in red. From the descriptions used more than once, 64% of the responses were

positive, 22% were neutral, and 14% were negative. This revealed a mostly positive student

perception of the college process in the spring of their junior year. Since there was no pretest, it

is difficult to determine if these responses are the result of Building STEPS coursework, other

external factors, or the way a student would have responded prior to starting the program.

Figure 11: Words students use to describe the college application process

This finding reveals how fall programming positively contributes to the experiences of students who persist. Students appreciate the sequence, depth, and breadth of knowledge gained in those early months. This finding also reveals how expectations are being met to the extent that they would encourage other students to join the program in subsequent years.

Finding #3 – The first fall meeting is the most memorable. Students confirm a sense of belonging and socialization as early as this first event.

Despite an initial sense of fear or hesitancy, students acclimate quickly because the first

event of the year provides a warm welcome, lighthearted agenda, and comfort within a new

setting. All six students referenced an outdoor venue where they participated in bonding

activities. Rather than force the students into academic settings immediately, Building STEPS

allows them the appropriate space to connect and meet new people in a welcoming

environment. Student C described a similar encounter, but as an introvert, *"I was a little nervous because that's my personality. I'm kind of introverted, but as I started to warm up everybody was cool. The staff made you feel very included and that made you feel more comfortable and secure."* Student D shared *"I was nervous. Yes, definitely nervous."* Despite being reserved or feeling nervous, students are still welcomed in an environment that quickly calmed any tensions.

There were no surveys available to illuminate any additional responses regarding this first meeting. However, the student interviews were impactful as all six students referenced this specific meeting as the point where their hesitancy started to dissolve. When asked about the most memorable experience in Building Steps, all six mentioned this event. All six of the interviewed students were either in their senior year of high school or already in college. Thus, it had been several years since they were newcomers and still vividly recalled that very first day and how their nerves were calmed.

This welcome session is where students first develop a sense of socialization and either enhance their curiosity or begin to lose interest from unmet expectations. Organizational entry reminds us that these two pathways, socialization or turnover, are realized at a very early stage in the newcomer process (Louis, 1980). During these early stages, and particularly during the first meeting, students who persist begin to perceive Building STEPS advisors as mentors. The students feel a sense of belonging and attachment to the staff members who will eventually guide them to and through college.

Finding #4 – **Staff serve as mentors that students never realized they needed.**

After that first outdoor event, STEM career exposure and college application workshops begin. Despite the shift to academic-focused topics, students still praise the program for helping them uncover new STEM opportunities and provide tips to navigate the college admission process. As the literature confirms, this is the point in onboarding where individuals progressively transition from newcomer to insider or from the encounter stage to the adaptation stage (Van Maanen & Schein, 1977). The High School Engagement Director says Building STEPS uses the word "advisor" to describe their role, rather than mentor. However, several students explicitly addressed mentorship as a contributing factor in remaining in the program. As Student D says, *"If it weren't for…(insert name of staff member) I couldn't have done it.*" Another student remarked "*They care for you. It's just incredible. They are my mentor for life."* The staff are truly committed to impacting the lives of Baltimore City youth as evidenced by the student remarks.

Prior to starting Building STEPS, few students were able to identify a mentor in their life. They each briefly mentioned a teacher or school counselor who guided them at one point, but the descriptor words were bleak in comparison to the Building STEPS advisors. Students said school counselors "*worked with me*" and "*helped me out*" while Building STEPS advisors were described as "*the inspiration I needed*" and "*coaching that changed my life*." This positive mentoring also led to improved levels of self-efficacy. The students were able to recognize or reinvigorate passion for the STEM fields and believe that they had the ability to apply and attend college. As the literature confirmed, mentorship is positively tied to self-efficacy which consequently leads to more positive student outcomes (Parikh, 2012).

In addition to the interviews, the open-ended program survey responses made several mentions of mentorship. The word "mentor" was not always referenced, but there were nods to the sentiment when students talked about their experience in the program thus far. They used words such as "inspiring" to describe the support they were receiving. They also referenced how the support systems in the program are "awesome" and "amazing" for creating career and college preparation exposure. For each student who spoke of mentorship, they were also questioned when mentorship became a realization. Each student alluded to it being a process rather than a specific point in time. This findings continues to stress the importance of persistence as mentorship is not something students immediately experience.

Finding #5 – Student GPA and high school attended reveal trends that deserve additional consideration

The quantitative analysis revealed relationships between students who did not persist and the high school they attended or the GPA they held at the time of acceptance. Starting with high school attended, Table 5 reveals two schools where 0% of students, who started the program between fall 2016 and fall 2019, persisted through high school graduation. The color scale spotlights the higher persistence rates in green and lower persistence rates in red. Average persistence at the five largest feeder schools (#5, #6, #7, #10, and #12) is 65% which is a favorable ranking on the color scale. While there are only five schools with persistence rates lower than 50% these five constitute one third of the total school partners.

THEY CARE FOR YOU. IT'S JUST INCREDIBLE. THEY ARE MY MENTOR FOR LIFE.

Student D

School	Total participants	Dropouts	Persisted	% Persisted
School #1	6	1	5	83%
School #2	6	2	4	67%
School #3	29	14	15	52%
School #4	26	8	18	69%
School #5	49	22	27	55%
School #6	63	18	45	71%
School #7	33	14	19	58%
School #8	21	16	5	24%
School #9	19	10	9	47%
School #10	66	15	51	77%
School #11	4	4	0	0%
School #12	45	17	28	62%
School #13	6	5	1	17%
School #14	2	2	0	0%
School #15	31	10	21	68%

Lowest %   Highest %

Table 5: Average persistence rates by high school

This finding is relevant to persistence because it may point to specific high schools that require additional attention to retain students. All of the students who participated in interviews attended high schools with persistence rates above 50%. In fact, all but one student attended one of the feeder high schools. In the interviews, students remarked that most had another peer joining from their high school. Even if they were not friends to start, it created a commonality among members of the entering cohort. This works to enhance socialization, a key component for newcomers. Social integration helps students develop friendships and creates affiliations (Tinto, 1975) in addition to providing a framework for students to learn how to fail and succeed (Gardner, 2008). This finding may suggest that students who do not enter with peers from their own high school are slower to integrate and progress from newcomer to insider.

Individual student data was also queried by incoming student GPA. Table 6 calculates the difference in the average student GPA from each school and average dropout GPA from that same high school. Cases where the dropout GPA is lower than the overall GPA are in red.

Nine out of fifteen schools reveal a lower GPA for students who do not persist than the average of all participating students. The three schools with no difference in GPA are the schools where persistence rates were either 0% or all but one student left the program. These are also the three schools with the lowest student acceptances. Three schools exhibited slight increases in average GPA for the students who did not persist. Most students dropping out of these schools were from dismissals.

When the GPA and high school dropout rates are overlayed, no correlation is found between schools with higher entering GPAs and their dropout rates. The five schools with the highest entering GPAs (#1, #3, #5, #7, and #10) had persistence rates ranging from 52% to 83%.

These quantitative findings prove that additional inquiry is necessary. Since these findings are the result of only four years of student data, there may be other cohorts that run counter to these findings.

Identifier	GPA (all)	GPA (drop outs)	Difference
School #1	3.37	3.10	-0.27
School #2	3.06	3.00	-0.07
School #3	3.31	3.21	-0.11
School #4	3.20	3.10	-0.10
School #5	3.51	3.41	-0.09
School #6	3.25	3.31	0.07
School #7	3.29	3.30	0.01
School #8	2.98	2.96	-0.02
School #9	3.05	2.85	-0.20
School #10	3.31	3.33	0.02
School #11	3.02	3.02	0.00
School #12	3.26	3.26	-0.01
School #13	2.86	2.86	0.00
School #14	3.00	3.00	0.00
School #15	3.21	3.18	-0.02
Average	3.20	3.13	-0.07

Table 6: Average GPA by high school

Recommendations

Finding #1
Students were hesitant and uncertain of the experience prior to commencing programming.

→ **Recommendation # 1** - Include current participants/alums into recruitment
Recommendation # 2 - Be explicit about mentorship and socialization
Recommendation # 3 - Improve attendance rates via accountability
Recommendation # 4 - Reconsider attendance policy

Finding #2
Students report mostly positive responses to programming and a positive outlook on the college application process.

→ **Recommendation # 1** - Include current participants/alums into recruitment

Finding #3
The first fall meeting is the most memorable. Students confirm a sense of belonging and socialization.

→ **Recommendation # 1** - Include current participants/alums into recruitment

Finding #4
Staff serve as mentors that the students never realized they needed or desired

→ **Recommendation # 1** - Include current participants/alums into recruitmen
Recommendation # 2 - Be explicit about mentorship and socialization

Finding #5
Student GPA and high school attended reveal trends that deserve additional consideration

→ **Recommendation # 5** - Reevaluate relationships among high schools

The following recommendations converge around two concepts: recruitment practices and early interventions during the fall of junior year. Under the current recruitment model, students attend an information session at their respective high school. There are a few missing elements that could enhance that session to convince more qualified students to apply and for potential dropouts to develop a greater understanding of the experience and expectations. As programming begins in the fall of the student's junior year, several students will drop out or be dismissed because they lack self-efficacy or cannot envision how the time commitment will be worth the support they could gain.

Recommendation #1 – **Include current participants/alums in recruitment**

Current Building STEPS students reported high levels of uncertainty in what they will experience or can expect in the program. Their participation is often based on simple curiosity. This curiosity has to carry a student through the summer and into the first few months of

programming to successful transition from outsider to newcomer to insider. This first

recommendation is designed to improve program understanding up front to ensure

participants have a true understanding of what they can expect. Students should have more

than just a curiosity and instead feel an eagerness and enthusiasm for the positive changes they

could soon have in their lives.

Recommendation one asks Building STEPS to find innovative ways to involve current

program participants or alums into the recruitment process. Ideally, a student will be attending

or has graduated from the same high school as the recruited students. The purpose of this

recommendation is to allow students to hear a trusted voice who can speak to lived

experiences. During the interview with the High School Engagement Director, she described the

process of walking into a majority-black high school as a red-haired white woman asking

students to trust in the process. While this individual is largely successful in the endeavor, as

evidenced by how many students apply, incorporating someone who has attended the same

high school may enhance the sense of trust and authenticity of the presentation. Black males,

in particular, require trust to overcome the negative influences that have stalled their journey

to self-efficacy (Rhoden, 2017).

Prior to the COVID-19 mandated shift to virtual learning, it might have been impossible

to ask a current or graduate student to participate in high school recruitment sessions. Virtual

engagement has now been normalized and would be an ideal solution if a student was not able

to present in person. Other than needing Internet access in the high school and participation

from the student, no other additional resources are required to launch this effort.

Recommendation #2 – **Be explicit about mentorship and socialization**

The new student recruiter should be candid about the role mentorship plays in the process. This is particularly important for students entering science-based career fields. A 2012 study confirms that underrepresented science undergraduates are susceptible to academic major changes unless they form strong relationships with mentors (Ramirez, 2012). Furthermore, mentorship is tied to self-efficacy which all interviewed students addressed as a key contributor to remaining in the program. This confirms the research that ties self-efficacy to improved persistence rates (Concannon & Barrow, 2010). Building STEPS is not only providing mentorship to current participants, but they are changing lives along the way. It is difficult to express that sentiment without having experienced it, thus involving a current participant in the recruitment process creates that genuine link to student outcomes.

The six interviewed students alluded to having none or few friends in the program. Many expressed concerns about belonging and hesitancy in developing any true sense of community. During the recruitment phase, Building STEPS should consider the role that socialization plays and be more explicit in describing how students build community. Much of that socialization happens as students progress from outsider to newcomer. Recall the organizational entry model where newcomers either turnover from unrealistic or unmet expectations or enter the stages of socialization and begin to acclimate to the new environment (Louis, 1980). Students must adopt a better, and earlier, understanding of the anticipated culture and social environment they are entering.

Current or past participants with personal experiences can more effectively describe the newcomer transition while maintaining a credible disposition. I liken this to the college admissions process where recruiters speak on behalf of the college they represent. Many

recruiters did not attend the school they represent, yet speak to the lived experience. When current college students participate in college recruitment events, it traditionally results in more authentic conversations and establishes trust in the experience.

This recommendation seeks to heighten the level of student curiosity at an early stage. Students who persisted in the program relied on anticipated socialization in the summer prior to starting Building STEPS. This enhancement would create an opportunity to broaden understanding of the lived experience from the first interaction.

Recommendation #3 – Improve attendance rates via accountability

Building STEPS has a three-strike policy on attendance. After the third absence, students are dismissed regardless of reason for the absence. The majority of students who leave the program are dismissed in January or February of their junior year, this means most absences are occurring in the first few months of programming. From the students who do persist, we know that their curiosity is peeked and maintained in the fall despite varying levels of stress that accompanies the start of their junior year of high school. Admittedly, students may experience some setbacks that can prompt them to skip a program or question if they should attend on a given day.

To combat these dismissals, one recommendation is to create accountability partnerships between students. There are several models that can inform this accountability. The organization might partner two students from similar high schools because they can provide in-school support. That may not be possible, however, if only one student from that high school is invited into the cohort. A second option is to pair students from high persistence high schools with students from low persistence high schools. Similarly, match a student with a

low GPA to a student with a high GPA. Both suggestions benefit the low persistence high school and lower GPA student as these are the most vulnerable populations who may require additional attention.

Another accountability option is to match more seasoned students with a student from the new incoming cohort. This model mirrors a research study where new online learning students were matched with program completers to improve motivation and facilitate peer connection (Motzo, 2016). Not only did this initiative improve social engagement but it also positively impacted persistence rates.

Regardless of the chosen method, the accountability partnerships fixes two concerns. First, it enriches socialization. We already recognize this was a key component to the organizational entry model. Second, it allows students to motivate each other to persist. Buddy systems play a supportive role in education. They provide friendship (Carter at al., 2016), increase a sense of belonging and combat stress (Ercan et al., 2017), and support students who experience trauma or bullying in school (Cowie, 2011). For Building STEPS, this accountability, or buddy system, would provide an additional layer of support to encourage students to persist and increase their sense of community earlier in the onboarding process. The interviewed students who persisted in Building STEPS talked about the easy friendships they formed and the bond they felt to their newly found mentors. Accountability seeks to enhance these relationships earlier in the process.

Recommendation #4 – **Reconsider attendance policy**

Building STEPS reevaluates their attendance policy yearly. In the end, it remains unchanged because attendance is deemed critical for relationship building and successful

career and programming outcomes. While three absences are troublesome, there may be circumstances where a student is truly deserving of another chance. One recommendation is to maintain the attendance policy but allow students to appeal their dismissal. Some students will accept the dismissal as favorable and not entertain the appeal option. Other students might not understand how their absence has affected their participation and upon approval, could agree to watch programming (if recorded) or write a statement/essay about their programmatic experience thus far. A written statement would allow for reflection of past experiences and permits the organization more time to assess the student's progress.

Another policy recommendation is to require students to discuss their absence in person or through an online platform. The current policy requires students to submit an Attendance Development Plan if they did not provide advanced notice of the absence. While these may be effective, it can still result in future absences. Conducting a face-to-face session might allow the students to express additional concerns that otherwise may not be captured in written form.

To further expand on this recommendation, we revisit how junior dismissals are prominent in early spring, implying that most absences happen in the fall. While we do not know why dismissals are so high in that first semester, students who do persist claim that the first semester can be overwhelming and there is much hesitancy (finding #1) about the approaching experience. This recommendation speculates that flexibility with the attendance policy will thereby improve persistence rates.

Recommendation #5 – Reevaluate relationships among high schools

More than 50% of students from one third of the partnership schools do not persist. This staggering statistic deserves some attention. While the reason for those persistence rates is unknown to the researcher, the organization should consider this an area for additional inquiry. In an interview with the Building STEPS High School Engagement Director, it was noted that relationships between the organization and the high school vary. This is based on school counselor caseloads, past experiences with the organization, staff turnover, and other unidentified factors. While the partner high schools support students missing class days to attend programming, there could be additional relationship building opportunities. Recognizing that five out of fifteen partnership high schools have concerning outcomes with the program, students from these high schools may require additional interventions and reinforcement of program outcomes to truly understand the commitment.

Limitations

In February of 2020, Building STEPS was approached about a potential partnership for this capstone project. The problem of practice was quickly identified, and the idea solidified. One month later, the COVID-19 global pandemic caused a disruption with unknown consequences. Like much of my cohort, I persisted with the organization and submitted the final proposal and Institutional Review Board (IRB) approval in August 2020. The pandemic is a major limitation because it has changed the way students perceive learning. Internal validity is a concern as it relates to this historical event. The researcher, Building STEPS staff, and students may have been influenced by the pandemic and how the organization has shifted in response. One prominent example is with the observation component. Virtual programming does not necessarily mimic the way students may have interacted during in-person programming.

A combination of the researcher's personal circumstances (transitioning to a new job) and the pandemic interfered with the observation component of the qualitative research. First, in a non-pandemic year, onboarding would have been in person rather than virtual. The observations from fall 2020 are not an accurate reflection of the traditional workshops and events students experience in their first few months. While the topics were nearly the same, students do not experience virtual events the same as in person. There are certain areas of study that are more difficult to grasp in a virtual setting compared to a lecture-style or classroom setting (Allcoat & von Mühlenen, 2018).

The limited number and the age of students interviewed may have impacted the outcome. The research was restricted to students age 18 or older which only allowed participation from students who were onboarding long ago. While the original hope was to interview at least a dozen students, it became apparent that this was not feasible as very few students expressed an interest in interviewing and fewer students showed up to their scheduled times. Selection of interviewees was also limited to those who are still in the program, rather than the dropouts.

In addition to those limitations, bias played a role in several areas of the qualitative research. As a higher education administrator for the last 10 years, I admit that **experimenter expectancy bias or confirmation bias** may have played a role during the interpretation of the data. This was present several times during my conversation with Dr. Rifkin when I was reminded to let the data speak rather than me speaking for the data.

In addition to the researcher, there are several biases that may have been present during the student interviews:

- **Volunteer bias:** Was abundantly present as evidenced by Building STEPS remarking that they "were not surprised" to learn who was interviewing. This implies that the students may be particularly vocal or more willing to express their opinion. Students with less organizational engagement did not interview so there may be missing opinions in the study.

- **Recall Bias**: This research was limited to participants 18 years of age or older. Therefore, most of the student interviews involved students who experienced the onboarding process one and half years (or more) prior to the interview. Students answered questions based on memories and recall of past experiences.

- **Social Desirability Bias**: The interviewed students are still active participants in Building STEPS. There may have been some hesitancy to answer questions that asked for constructive feedback for fear of the information returning to the organization and negatively impacting their participation.

Conclusion

Building STEPS has impacted hundreds of Baltimore City youth over the last 20 years. The organization is committed to providing precollege preparation, career programming, and to supporting students to and through college. Although only 9% of Baltimore City Public School students graduate from college, Building STEPS reports an 80% college graduation rate from their participants. While this impact is impressive, 29% of students do not persist within the first year of programming. The organization is specifically concerned with how onboarding affects participation as students acclimate to the new experience.

A mixed methods approach was used to evaluate the student experience through the eyes and ears of current participants. Attendance rosters were also evaluated to determine possible relationships between persistence rates at certain high schools and student GPA at the time of acceptance. The findings reveal that students do not persist for a variety of reasons and at different times of the year. Students are most commonly lost because of attendance violations during a student's junior year. Most of the absences occur in the fall semester which results in dismissals in January or February.

The relationship between dropouts and high school attended is a problem for one third of the schools. More than 50% of students from those schools do not persist within the program through end of junior year. Additional analyses reveal that the average GPA of students who do persist is higher than those who do not.

Despite some of those concerning findings, students who remain in the program report a mostly positive experience with programming and perceptions of the college admissions process. This is not to say that participants are not hesitant or suspicious of program outcomes. However, their uncertainty is overcome by an initial curiosity that leads to an immediate sense of belonging created by the first event of junior year. Students describe this event as the moment they felt certain of their commitment. As programming continues, students begin to recognize staff as mentors with the ability to transform their life trajectory.

The following five recommendations are designed to improve current recruitment practices and improve attendance and persistence rates during the onboarding phase. First, Building STEPS should consider incorporating current participants into high school information sessions, and second, be more explicit about mentorship and socialization opportunities. Third,

an accountability partnership is proposed to enhance peer-to-peer motivation. Fourth, the organization may consider slight revisions to the attendance policy, either through earlier intervention or providing an exception for students with extreme circumstances beyond their control.

The fifth and final recommendation is prompted by the correlation between abnormally low persistence rates and specific high schools. This recommendation asks Building STEPS to investigate why these specific high schools are consistently seeing troubling persistence rates. Additional inquiry is needed to determine if the problem rests with the school administrators/counselors or some other unknown root cause.

Another avenue for continued inquiry is the lack of summer engagement between May acceptances and the start of fall programming. The High School Engagement Director noted during our interview that summer programming has been offered but attendance was poor. No interviewed students mentioned this event, so nothing is known about the perception of the event. It would be interesting to learn if other non-profit organizations require students to participate in summer programming and how they market the return on investment. This is intriguing area for investigation that could potentially enhance socialization prior to entry in the fall.

Although Building STEPS works with urban youth, there is external validity with some of the findings. Developing peer-to-peer accountability and absorbing current participants into the recruitment process are both tangible action items, regardless of student population. These are both practices that have seen success within school systems and outside of education. I trust that these results will contribute to the literature on precollege programs to help other

organizations enhance recruitment practices and establish guidelines for the onboarding

period.

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Interest Form

Fields marked with an * are required
First Name *

Last Name *

High School *

Current Grade Level *

> 9th ▼

GPA *

> 2.0 ▼

Email *
Phone Number *

HOME ADDRESS

Street Address, and if applicable, apartment number *

Zip Code *

How did you hear about Building STEPS? *

- ☐ Social Media
- ☐ Email
- ☐ Website
- ☐ Word of Mouth
- ☐ Other

*Source: Building STEPS (n.d.-b). Building STEPS: How to apply. Retrieved from
https://www.buildingSTEPS.org/our-program/how-to-
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Appendix B
2020-2021 Junior and Senior Year Programming

<u>Junior Programming</u>

August 19	Welcome Party – introductions & icebreakers with new students
September 15 -17	Recruitment Sessions: Info Presentations for new students
October 7	Orientation: Set expectations, games with Genesee Valley
October 14	Junior Seminar 1: Sci Tech Shark DNA lab, college timeline discussion
November 5	Building Brains Study Hall kickoff
November 18	Junior Seminar 2: JHU Applied Physics lab, B-STEPS summer program/internships introduction
December 2	Junior Seminar 3: Career Symposium with Towson Career Center presentation & professional panels
January 14	Junior Seminar 4: Animal Care and Rescue Center Tour & Animal Medicine lab; presentation from Yleana SAT Program
February 24	Junior Seminar 5: Learning Undefeated Physics Lab
March 24	Junior Seminar 6: US Naval Academy water science activities
April 14	Junior Seminar 7: UMBC Center for Women in Tech (coding workshop)
May 12	EOY Celebration: College Prep activities and teambuilding

Recurring Junior Programming:
Building Brains (Study Hall, every other Thursday)
Tutoring Sessions, upon request

<u>Senior Programming</u>

September 3	Orientation: Set expectations & review college application process
September 16	College Workshop 1: College Application Overview, College Essay Basics
September 28-Oct 1	Office Hours (college app work time)
October 7	Financial Aid Night 1: Overview & FSA ID Creation
October 12-15	Office Hours (college app work time)
October 14	Financial Aid Night 2: FAFSA Completion with UMBC
October 21	College Workshop 2: Common App Activities, Essay Support
October 26-29	Office Hours (college app work time)
November 9-12	Office Hours (college app work time)
November 18	College Workshop 3: Accountability, College List Check-in, Application work time
November 23-34	Office Hours (college app & FAFSA focus)
December 16	College Workshop 4: College Cost Calculator, Scholarship Process Intro
January 20	College Workshop 5: Scholarship Applications -- Resumes & Essays
February 17	College Workshop 6: Reading Financial Aid Letters, Budgeting for College
March 17	College Workshop 7: Career Research & Professional Panels
April 21	College Workshop 8: Study Skills & Time Management
May TBD	TENTATIVE – EOY Celebration: College Bridge activities and teambuilding

Recurring Programming:
      Writing Advisor Meetings: Scheduled by student with volunteer
      Tutoring Sessions, upon request

Appendix C

Interview Questions & Students

<u>Student Interviews Questions</u>

1. How did you first learn about Building STEPS?
    a.   Were you aware of the program prior to your sophomore year of high school?
    b.   Was the program advertised through a flyer, work of mouth, a counselor?

2. How did you eventually decide to apply to the program?
    a.   Did your family influence your decision?
    b.   Did your school encourage your participation?
    c.   Were any friends joining at the same time?

3. Can you describe the experience the first time you met with your cohort?
    a.   How did you feel when you first walked in?
    b.   Did anything surprise you about the day?
    c.   How did you react to the content of the meeting?
    d.   Did it meet your expectations?
    e.   Do you remember any specific people you met that day?

4. Of those early experiences, what was most memorable?
    a.   What about that moment sticks in your mind?
    b.   Are there any specific people you remember from that moment?

5. Was there ever a time you considered leaving the program?
    a.   When was that moment?
    b.   How were you feeling at the time?
    c.   Did you tell anyone about those feelings?
    d.   What convinced you to stay?

6. Having been in the program for [insert time], what has:
    a.   Met your expectations?
    b.   Not met your expectations?

7. Do you have a mentor in your personal life?
    a.   If yes – is mentorship something you desire from this program?
            a.   Can you describe any mentorship experiences you have had so far?
    b.   If no – is this something you anticipate receiving in the program?
            a.   Can you describe any mentorship experiences you have had so far?

8. What negative feedback, if any, would you share?

9. How would you describe Building STEPS to a friend?

Staff Interview Questions

1. Tell me about your role (length of time with Building STEPS, involvement with students, ability to be innovative)

2. As it relates to programming, what new initiatives have you or the organization tried that you would call:
    a. Successful?
    b. Not Successful?

3. If budget was not a constraint, is there any new process you would begin or new initiative you would pitch?
    a. How long would it take to launch this initiative?
    b. Would it be a one-time hit to the budget or recurring cost?
    c. Who would it most benefit?
    d. What type of permissions would be needed to start it?

4. In your opinion, what barriers do you think students experience that prevent them from:
    a. Starting the program?
    b. Continuing in the program?
    c. Have you made attempts to correct any of these barriers?
    d. Do you believe it's largely an organization-based issue, related to the student population, both or none?

5. Let's talk about the family members – in your opinion what is the role they play?
    a. When do they begin their involvement in the recruitment process?
    b. Is parental consent required to commit to Building STEPS?
    c. What events do they traditionally attend in the first few months?
    d. Are family members surveyed at any point? What do those surveys include?
    e. Do you think they are too involved, not involved enough, or somewhere in between?

6. How would you describe the relationship you have with the high schools?
    a. Do you think the current number of high schools is sufficient?
    b. Are you looking at any new partnerships? If yes, how were those schools selected?
    c. If any improvements could be made with the relationship, what would it be?

7. How have students responded to the change to virtual sessions with COVID=19?
    a. Do you find that their engagement level is the same?
    b. Have you experienced any unexpected roadblocks?
    c. How have your guest speakers reacted to the change?

8. How do you describe the mentorship role you play?

9. Is there anything else you would like to add that might be helpful to this study?

Interviewed students

Name	High School	GPA
Student A	School #6	3
Student B	School #10	3
Student C	School #5	3.3
Student D	School #3	3.8
Student E	School #10	4
Student F	School #6	3.08

Appendix D
Building STEPS Post-Programming Survey Questions

2018-2019 Questions[1]
1. Which school do you attend?
2. What was our favorite part of the day?
3. How would you improve the day?
4. Overall, how satisfied were you with the day (1= very satisfied, 5 = very dissatisfied)

2019-2020 Questions[1]
1. What school do you attend?
2. What was our favorite part of today's Junior Seminar?
3. Tell us one thing you learned today
4. What is your inspiration to go to college?
5. In one sentence, describe your experience in Building Steps so far this year.
6. Share any concerns/questions that you have for us.
7. Overall, how satisfied were you with the day?

2020-2021 Questions[1,2]
1. What school do you go to?
2. What was our favorite part of the day? Feel free to elaborate more about your enjoyment of the seminar.
3. Did you like the conversation about…*insert college application tool*
4. What careers are you interested in learning more about? (*Fall survey only*)
5. What advice would you give to someone considering joining Building STEPS? (*March 2021 survey only*)
6. What questions do you have for us?

[1]*Other questions were asked but these were the only questions used for research purposes*
[2]*These sessions were virtual*