AN EXAMINATION OF UNDERPREPARED MATH STUDENTS WHO OVERCAME ACADEMIC PROBATION AT A HISPANIC-SERVING INSTITUTE

By

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This dissertation is submitted in partial fulfillment of the requirements for the degree of

Doctor of Education

Ferris State University

April 2021

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ABSTRACT

This case study examines how developmental math students on academic probation at a four-year Hispanic Serving Institution (HSI) succeeded in getting off academic probation. This research used a qualitative approach to gain in-depth knowledge on how developmental math students overcame academic probation. Furthermore, this study focused on Hispanic students at a large institution in Texas serving primarily Hispanic students.

The study design was predicated on two central questions: (1) What strategies contribute to a developmental math student's ability to exit academic probation at a Hispanic Serving Institution and (2) does a sense of belonging impact a student's ability to clear academic probation? The researcher interviewed four students enrolled in developmental math during the 2016, 2017, and 2018 spring semesters to examine how they cleared academic probation and if a sense of belonging played a part in their success.

Using an inductive analysis of interview transcripts and researcher notes, the researcher identified multiple strategies students employed to overcome academic probation. Additionally, two primary themes were identified as impacting a student's sense of belonging and ability to overcome academic probation: motivation and involvement. Participants' stories revolved around self-motivation, and the motivation inspired by family and friends, academic advisors, and professors. Each type of motivation played a significant role in the participants persisting.

Participants also described how being involved on campus played a vital role in the sense of belonging and successfully getting off academic probation. By becoming involved, participants found the motivation to take the steps needed to improve their GPA.

This research provides evidence on the importance of a sense of belonging to Hispanic underprepared math students in overcoming academic probation. The case study showed that the more participants felt like they belonged, the more they believed in their ability to succeed at college, and the more their grades improved.

KEY WORDS: academic probation, belonging, validation, Hispanic, developmental math, retention, motivation, involvement

DEDICATION

I dedicate this body of work to my mother, Betty Diane Evans Lemons Johnson. Throughout my entire life, my mom believed in me and supported me. She always believed I could reach the stars if I wanted to—if I chose to. Each time I reached a milestone, she shared in my success and happiness. Each time I failed, she told me to get back up and keep fighting. She passed away while I was in the middle of working on my doctoral degree, so she did not get to see this work completed. This is one of the biggest accomplishments of my life and I know deep in my heart that she is so very proud of me for pushing through to complete this research.

I know that she is smiling down on me from heaven, so proud of me.

ACKNOWLEDGMENTS

I would like to express my sincere heartfelt appreciation to the members of my dissertation committee, Dr. Mary Zimmerer, Dr. Deborah Daiek and Dr. Rosemary Karr. Your willingness to go through this journey with me means more than you will ever know. Your mentorship, encouragement, and advice have allowed me to grow as a person, scholar, and professional. Thank you, truly for all you have done.

To my chair, Kathy Stein, your unwavering guidance, direction, and support during the past few years have pushed me to complete this work. Had it not been for you, many times I would have given up. Your willingness to spend hours talking through ideas and pushing me to think larger has truly been an experience I will never forget.

I would like to thank my DCCL Cohort. There is no way I would have made it through without your support. It was you all that kept me going, picking up the slack, and encouraging me when my mom passed away. Thank you, all. I will cherish you all forever.

To my Ally Girl – I am not me without you. You are my sounding board, my editor, my shopping buddy, my traveling partner, my biggest supporter, and you believe in me more than anyone – your support has meant everything to me during this journey. You, my daughter, are my best friend and I could not have gone through this journey without you.

To my sister, Audrea. We are sisters, always and forever. You have always believed in me and knew I would finish – even when I did not. Your constant love keeps me going.

To my boys, Markos, and Jake, while you may think I am crazy for continuing school, you knew once I started that there was no doubt I would finish. Thank you for believing in me.

To my husband, Saul, thank you for letting me be me. Even when I want to take a road that keeps me working like crazy, that puts more stress on our already busy lives. You give me the freedom to grow as a person – to dream of what I can be and then support me while I go get it. Your support and love are my constant. You are my person. You are my home. I will love you forever, and I cherish the life we have built together.

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CHAPTER ONE: INTRODUCTION TO THE STUDY

INTRODUCTION

Over the past decade, America has increasingly moved from a manufacturing environment to a knowledge-based environment where global competition is a required part of everyday life, and the need for skilled and knowledgeable workers is a necessity. The importance of higher education is immeasurable not only for students who attend institutions but also for the nation's economy and health. The Lumina Foundation states 11.5 million jobs were created in 2017 for workers with a postsecondary degree compared to only 80,000 new jobs for workers with less than a high school degree (Lumina Foundation, 2019, p. 4). Additionally, 6.2 million jobs remain unfilled due to the lack of qualified candidates (Lumina Foundation, 2019, p. 4). The American Association of Community Colleges (AACC) has said that it is in the best interest of the country to ensure more individuals think critically and independently by providing high-quality education beyond high school because the "connection between education and American prosperity is direct and powerful" (AACC, 2012, p. vii).

For generations, the United States led the world in the number of degrees obtained (Watson, 2015, p. 4). However, the Organization for Economic Cooperation and Development (OECD), a group consisting of 36 countries that track and publish data on degree attainment for its member countries, has placed the U.S. in 12th place in obtaining a degree for those who are between the ages of 25 to 34 years, falling behind countries such as the Republic of Korea, Poland, Canada, and Czech Republic (NCES, 2020). Likewise, the National Center for

Education Statistics (NCES) has reported that only 60% of the 2010 cohort at four-year institutions completed their degree by 2016 and that the graduation rate drops to 32% when an institution has open enrollment (NCES, 2018). Open enrollment means that there are limited admission criteria. Students have a high school diploma or GED and follow the school's application process (Community for Accredited Online Schools, 2019). The National Student Clearinghouse Research Center (NSCRC) also reported that in 2012, only 70.1% of first-time, full-time students enrolled in a public four-year institution had graduated in six years. More importantly, though, almost 21% of those students left college without completing a degree (NSCRC, 2019). Why are graduation rates significant? Because, on average, a college graduate earns more than a college dropout or non-attender. The United States Bureau of Labor Statistics (USBLS) states that the "more you learn, the more you earn" (Torpey, 2018). The USBLS also reports that a person with a bachelor's degree earns on average $23,000 a year more than a person holding a high school degree and that a person with a bachelor's degree earns an average of $1173 per week while a person with a high school diploma earns $712 per week (Torpey, 2018).

Bettinger et al. (2013) state that the "low rates of college completion are a major problem for the United States because less than 60% of students at four-year colleges graduate within six years, and at some colleges, the graduation rate is less than 10%" (p. 93). Additionally, Schneider and Yin (2011) examined students who started college in 2002 but did not complete a degree. In their report, *The High Cost of Low Graduation Rates: How Much Does Dropping out of College Really Cost,* Schneider and Yin (2011) propose that the nation incurs a high cost due to students not graduating from college (p. iv). They projected that the one-year cost to the country for the 2002 cohort was "$3.8 billion in lost income, $566 million in lost federal income

taxes, and $164 million in lost state income taxes" (Schneider & Yin, 2011 p. 2). These numbers represent the loss incurred for this one year and one cohort. Schneider and Yin (2011) further estimated the "cumulative loss of this cohort to be $158 billion in lost income, $32 billion in lost federal income tax payments, and $7 billion in lost state income tax payments" (p. 5). This number becomes almost unimaginable when one looks at all cohorts. It befits us as a nation, a state, and an institution to understand why students do not complete their degrees and find ways to help them complete them. To safeguard the American dream and ensure that the national economy's demands are met, colleges and universities must graduate more students. Consequently, the completion agenda is a critical part of an institution's mission.

COMPLETION AGENDA

In February 2009, President Barack Obama outlined his completion agenda to attain the world's highest proportion of college graduates by 2020 (Kanter et al., 2011). President Obama presented three reasons as to why this policy was needed. First, over 60% of jobs require a college degree. Secondly, an individual with a college degree earns 40% more over a lifetime than those without. Lastly, an educated citizenry is needed for an engaged democracy (Henning, 2015). Howard Bowen, in his book *Investment in Learning,* elaborates on the President's points when he stated:

> College graduates do obtain better jobs, become better citizens, act more intelligently as consumers, and enjoy a better quality of life. Each of these advantages' rebounds to the credit of society. As the level of education in a society rises, the social roles of employee, consumer, citizen, and parent are influenced significantly. (Bowen, 2017, p. x)

So as a nation, we need to figure out how to help more students graduate. This means that understanding what prevents students from obtaining their degree or certificate and why they leave college is just as important as identifying ways to help students persist. Student persistence

is the rate at which students return to college for their second year. Tinto (2006) has stated that "it is one thing to understand why students leave; it is another to know what institutions can do to help students stay and succeed" (p. 6). In other words, understanding why students leave does not help understand why they persist. More notably, it does not tell institutions, at least not directly, what they can do to help students stay and succeed. To achieve the goals of the completion agenda, institutions must continually identify barriers to student success and develop programs to address those barriers.

STATEMENT OF THE PROBLEM

This study will focus on students at risk of not completing a degree or certificate who persisted through one academic year. Specifically, this study focuses on the narrow set of demographics and characteristics for underprepared math Hispanic students on academic probation at a large institution in Texas serving primarily Hispanic students. To understand the student population being studied, both Hispanic and Latino people must be defined. Hispanics refer to a group of people's ethnicity and culture and are defined as those who speak Spanish and are descendants from Spanish-speaking countries (Merriam-Webster, n.d.). On the other hand, Latinos refer to geography and include Latin American people, including Central America, South America, and the Caribbean (Cuncic, 2020). For example, Brazil is considered Latino but not Hispanic because Brazil is a Latin American country, but their native language is Portuguese, not Spanish. On the other hand, those from Spain are considered Hispanic but not Latino because they speak predominantly Spanish but are not from Latin America. For this research, Hispanic students refer to students who are primarily of Mexican descent, and Spanish is their predominant language.

When Hispanic students who place into remedial coursework or course work below college-level find themselves on academic probation, they are at higher risk of not completing a degree. An analysis and better understanding of this group of students as it relates to persistence and completion can help institutions design programs, policies, and interventions that increase the student's chances of completing their degree or certificate. This, in turn, helps the institution, community, state, and national economy by meeting employers' needs. If the goal is to ensure the nation has the most college graduates and an able workforce, understanding the implication of being an underprepared minority on academic probation is imperative. Finding what works in helping them exit academic probation is vital and necessary. Kelsay and Zamani-Gallaher (2014) state that "understanding the motivation and persistence of underprepared students is central to understanding their success" (p. 33). This statement is even more true for underprepared students who are Hispanic and on academic probation.

IMPACT OF HISPANICS ON U.S. ECONOMY

In 2017, the New American Economy (NAE) research organization stated that "there are few groups more important to the health of the U.S. overall economy than Hispanics" (p. 1). This is because the number of Hispanics living in the U.S. has grown significantly. The Census Bureau reported in 2016 that 56.6 million Hispanics were living in the U.S., representing 17.6% of the U.S. population (Census Bureau, 2016). Moreover, the Hispanic Association of Colleges and Universities (HACU) stated that there were 59.1 million Hispanics in the United States, representing 18.1% of the total population in 2019 (HACU, 2019). This change means that the Hispanic population increased by 2.5 million in three years. In 2030, it is projected that the number of Hispanics is expected to jump to 74.8 million and is estimated to double in size by

2050, making it the fastest-growing ethnic-minority population in the U.S. (Duffin, 2020; Flink, 2018, p. 402).

Hispanics have had a significant influence on the U.S. economy as both wage earners and consumers. If the number of Hispanic people increases in the U.S., then the impact on the economy becomes more prevalent. The New American Economy (2017) reported that in 2015 Hispanic wage earners brought in $902.8 billion in income and spent over $687.8 billion nationally on goods and services (NAE, 2017, p. 3). This kind of economic contribution by the U.S. Hispanic community is increasingly important in moving the economy forward. However, as of 2017, Hispanics held a disproportionate share of low-wage jobs and lagged behind other racial and ethnic groups in terms of income and opportunities (NAE, 2017, p. 5). Thus, for Hispanics to help keep the nation's economy moving forward, they must obtain better jobs with higher-paying wages. The number of Hispanics who receive a degree or certificate must increase.

Focusing on Texas, in 2015, 43% of Texans aged 25–34 were Hispanic, and this number is expected to grow by 9%, reaching 52% by 2030 (Texas Higher Education Coordinating Board, 2015). This growth means that more Hispanics will contribute to the Texas economy. To ensure an able-bodied workforce, more Hispanic people will need to enroll in higher education. To support this claim, the Texas Higher Education Coordinating Board (THECB) reported that Hispanic student's enrollment into higher education has increased from 38% in 2000 to 46% in 2017 (THECB, 2019b). However, their data also shows that Hispanic students are not completing a degree. The THECB has stated that while Hispanics make up 41% of the Texas population, between the age of 25 and 34, only 26% of those with a degree or certificate are Hispanic" (THECB, 2019b, p. 2). When comparing this data to national data, HACU has

reported that only 17.2% of Hispanics have at least a bachelor's degree compared to 53.9% of Asians, 38.1% of Whites, and 24.3% of African Americans, making them the lowest educated demographic in the U.S. (HACU, 2019).

As a nation, we must connect the relationship between Hispanics' lack of a degree or credential with the impact on the economy. It is more imperative than ever to concentrate on this issue because the United States' demographics are changing and are becoming more Hispanic. Institutions have a responsibility to examine the Hispanic population to understand why the trend of poor academic performance and success persists (Flink, 2018).

PURPOSE OF THE STUDY

The purpose of this case study is to learn how underprepared math students who are on academic probation at a four-year Hispanic Serving Institution (HSI) succeed in getting off academic probation. A Hispanic Serving Institution as defined by the federal government is an "institution of higher education that has an enrollment of undergraduate full-time equivalent students that is at least 25%, Hispanic students, at the end of the award year immediately preceding the date of application" (U.S. Department of Education, n.d.).

Underprepared students who place into developmental education and enroll in remedial coursework are at high risk of not completing their degree. An underprepared student is defined as a student "whose academic skills fall below those needed to be successful in college" and is not yet ready to perform college-level work in reading comprehension, writing, or math upon admissions (Rhoades & Kramer, 2011, p. 1). Complete College America (2016) has reported that students who enroll in a four-year, non-research-intensive institution as an underprepared student graduate at a much lower rate than college-ready students for both Texas and the nation. Table 1 below represents Complete College America data:

Table 1: Complete College America 4- and 6-year Graduation Rates

First-Year Full-Time Student	4-year Graduation Rates	6-Year Graduation Rates
Nationally – All Students	20%	44%
Nationally Underprepared Students	8%	29%
Texas – All Students	24%	53%
Texas Underprepared Students	12%	38%

(CCA, 2016)

The Pew Research Center (PRC) stated that "Hispanics still lag behind other groups in obtaining a four-year degree" and that in 2014 the Hispanic graduation rate of those 25–29 was 15% (Krogstad, 2016). When Hispanic students are underprepared, it also puts them at risk of not completing their degrees. The Department of Education states that 58% of Hispanic students place into developmental education (King et al., 2017, p. 5). Additionally, Ganga et al. (2018) from the Center for the Analysis of Postsecondary Readiness (CAPR) reported in 2018 that of 100 Hispanic students enrolled at community colleges, 75 take developmental courses and 19 or 19% of the 100 graduates (p. 3). Ganga et al. (2018) also report that of 100 students, 64 white students took developmental education courses at community colleges, and 25 (25%) graduated. For Asian students, the number of students enrolled in developmental education courses was 68, and those students had a graduation rate of 29% (Ganga et al., 2018, p. 3). Thus, compared to White and Asian students, Hispanic students were 7–11% respectively, more likely to take a developmental education course and 6–10% respectively less likely to graduate. These data support the idea that when Hispanic students place into developmental education, they are less likely to complete their degrees. These staggering facts make it critical for each institution to understand how to help underprepared students succeed, particularly Hispanic students. It is even more crucial to connect the fact that almost half of the Hispanic students enrolled in the nation's

institution's place into developmental education, thus, impacting the completion rate for this demographic (Krogstad, 2016).

This research is desperately needed because it will contribute to the body of work on how underprepared Hispanic students persist. More importantly, it will narrow in on Hispanic students who are both underprepared in math and on academic probation to determine what strategies help them persist and if a sense of belonging helps them overcome academic probation.

Research Questions

The following research questions will guide the study's design, research, and analysis:

1. What strategies contribute to a developmental math student's ability to exit academic probation at a Hispanic Serving Institution?
2. Does a sense of belonging impact a developmental math student's ability to exit academic probation?

Significance of the Problem

Currently, little data can be found describing the risks of not graduating for underprepared Hispanic students on academic probation nor on what helps them overcome academic probation. While the information on completion rates can be found on specific topics such as underprepared students or students on academic probation, information on Hispanic students who fall into both categories is sparse. Institutions struggle to retain and graduate Hispanic students, in part, because they are an understudied population. Moreover, sine a disproportionate number of Hispanic students place into developmental education, it is essential to understand how many struggle to persist (McCann & English, 2017, p. 5). Thus, studying Hispanics who are both underprepared in math and on academic probation will provide information on how institutions can retain and graduate more Hispanic students.

Underprepared Students

Chen and Simone (2016), from the National Center for Education Statistics, stated that approximately 53% of Hispanics in four-year colleges enroll in some form of developmental education intervention (p. 18). Complete College America, however, has estimated that number to be lower, at 50% (CCA, 2020). Moreover, underprepared students typically enroll in some form of intervention to prepare them for college-level work. In many cases, the intervention is a remedial course in math, writing, or reading comprehension. The consequences of having such a large number of Hispanic students enrolled in remedial classes can be reflected in the low four-year graduation rates (Krogstad, 2016).

However, it is suggested that underprepared students need more help than with just content, and providing wraparound services is a crucial aspect of their success. Mathew Dembicki from the American Association of Community Colleges has stated that wraparound services are implemented to remove barriers to student success by partnering, coordinating, and helping students access services that complement and align with effective instruction (Dembicki, 2019). Wraparound services consist of but are not limited to tutoring, advising, supplemental instruction, coaching, and mentoring.

All students face challenges succeeding in college, but underprepared students face challenges that are sometimes insurmountable both academically and personally (Bettinger et al., 2013). Bettinger et al. (2013) make the case that while all students must adjust to college, underprepared students have to "simultaneously acquire college-level academic skills while adjusting to college" (p. 94). Regina Deil-Amen, in her work *Beyond Remedial Dichotomies: Are 'underprepared' College Students a Marginalized Majority,* states that "nearly all underprepared students—both those who are enrolled in remedial/developmental classes and those who are not—struggle to persist, and those in both categories who do persist are significantly delayed in

the acquisition of a college credential" (Deil-Amen, 2011, p. 60). Thus, without the proper support systems in place, underprepared students are at higher risk of not completing their degree and negatively impacting the completion agenda.

Understanding underprepared students is more complicated and challenging to describe because there are many reasons why a student may be classified as underprepared. For example, attitudes, beliefs, self-efficacy, and expectations can dramatically affect academic preparation (Wilmer, 2008). Grimes and David (1999) surveyed 500 community college students to determine the differences between underprepared and college-level students. In their study, Grimes and David (1999) found that an underprepared student:

- Took fewer years of math, science, and foreign language in high school.
- Planned for fewer years of college and limited their goals to associate degrees.
- Rated their academic ability, intellectual self-confidence, and emotional health lower than college-ready students.
- Expected to fail classes and take longer to complete a degree.

These differences make the disparity in success rates of underprepared students perfectly understandable. The question is, how do we help these students overcome these differences?

Melzer and Grant (2016) stated that "underprepared students are more likely to drop out of college and have lower GPAs compared to their peers" (p. 99). They also indicated that underprepared students were more likely to be first-generation college students, students from low socioeconomic statuses, and minority students. If that is not enough, Melzer and Grant show that underprepared students also feel as if they have little control over their lives, have less confidence in their decision-making abilities, and have unrealistic views regarding their academic abilities (Melzer & Grant, 2016). Underprepared students pursue emotional and

academic help less frequently and do not take advantage of campus resources when they are struggling.

Grimes and David (1999) and Melzer and Grant (2016) have clearly shown the difficulty of describing an underprepared student. It is not as simple as saying these students do not know how to read, write, or work on a math problem. Institutions must take a holistic approach to working with students to address their academic under preparedness and personal development (Wilmer, 2008). One way to attain this is by providing remedial coursework and developmental education support services.

The National Organization for Student Success (NOSS) defines developmental education as "a comprehensive process that focuses on all students' intellectual, social, and emotional growth and development. Developmental education includes, but is not limited to, tutoring, personal/career counseling, academic advisement, and coursework" (NOSS, n.d., p. 3). However, as indicated by prior studies, confusion exists between what developmental education and remedial courses mean, and the words are used interchangeably. Remedial courses refer to the coursework students take to prepare for college-level work, such as Beginning Algebra or Intermediate Algebra. Complete College America has defined remedial courses as "instruction designed for students deficient in the general competencies necessary for a regular postsecondary curriculum and educational setting" (CCA, 2017, p. 26). For this research, the definition of developmental education, as written by the NOSS organization, will be used.

Academic Probation

To further complicate the completion agenda, when students are placed on academic probation, they likely will not complete their degree or certificate. It has been shown "that as many as 25% of all students may be on academic probation" (Accredited Schools Online, 2020;

Cohen & Brawer, 2002; Garnett, 1990; Tovar & Simon, 2006, p. 549). Furthermore, Skyfactor Research (2017) showed that approximately one in six students end up on academic probation following their first term (p. 2). Generally, academic probation is a term used to indicate when a student is not making academic progress. It serves as a warning to students that they are not in good academic standing (Nelson, 2020). Tovar and Simon (2006) conducted a study of first-time community college students who experienced academic difficulties. They found that Hispanic students comprised the largest proportion of probationary cases college-wide at 39%, even though they represented only 26% of the college's population (Tovar & Simon, 2006, p. 558). They also found that Hispanic students were more likely to experience academic and social difficulties when entering college and were more prone to drop out of college than members of other ethnic groups (Tovar & Simon, 2006, p. 558).

Students who are on academic probation struggle to persist in college. Tovar and Simon described these students as having characteristics such as having poor academic preparation, poor time management, and study skills, possessing an external locus of control, and needing greater clarification of academic, personal, and professional development goals (2006, p. 549). These characteristics are also similar to those of underprepared students. As such, it is important to identify the link between being underprepared and on academic probation.

Satisfactory academic progress (SAP), while required by institutions, is also required by the Federal government, particularly when it comes to Financial Aid and the Pell Grant. The Pell Grant is offered to students who have a financial need and has strict requirements concerning the progression of students who receive those funds. It requires that students must maintain a cumulative GPA of 2.0 or higher and must complete at least two-thirds of the course credits they attempt. Students who fail to meet the SAP requirements at the end of the term can receive

financial aid for one more term. However, if they are not meeting the SAP requirements at the end of the second term, they may lose their Pell eligibility (Shudde & Scott-Clayton, 2016, p. 2).

The Community College Research Center (CCRC) studied the enormity of SAP failure and its consequences. In their report, Shudde and Scott-Clayton determined that "when credit completion is considered, the first-year SAP failure rate is approximately 40%" (2016, p. 2). They further found that, nationally, 21% of first-year Pell recipients were in jeopardy of losing their Pell grant due to the SAP GPA criterion alone (Shudde & Scott-Clayton, 2016, p.2). When almost a quarter of the nation's students are in danger of losing their financial aid because of a low GPA, it behooves institutions to implement programs and policies that help students exit academic probation.

When students are on academic probation and are also classified as underprepared, the risks of them not completing increases; when these students are also Hispanic, the risk rises to a level where institutions, state governing bodies, and the nation must address their lack of completion. This study will bring focus to this issue by studying underprepared, developmental math Hispanic students on academic probation to determine how they exited academic probation. Institutions, as well as the nation, benefit from the lessons learned from this research. The Lumina Foundation stated that "only a society that seeks to develop the potential of all its people can sustain a shared sense of purpose, a secure democracy and a vibrant economic future" (Lumina Foundation, 2019, p. 2). Thus, the challenges that Hispanic students face in achieving academic success have substantial political and economic implications for the nation (Flink, 2018, p. 403).

ASSUMPTIONS, DELIMITATIONS, AND LIMITATIONS

Assumptions

Hispanic students, particularly when underprepared, demonstrate specific needs during the transition to college. It is important to understand those needs and create programs that help them persist. This study uses a qualitative approach in the form of interviews to understand students' experiences exiting academic probation. Qualitative research provides a holistic approach to studying a phenomenon in a natural way and allows for an in-depth investigation into the understanding and insights about people involved in specific situations or events (Creswell, 2013; Yin, 2009). This researcher assumed that this case study's findings would expand the discussion on how underprepared Hispanic math students exited academic probation. It was also assumed truthful answers were given from participants.

Delimitations

The following delimitations have been imposed.

The population. Case study delimitations control the parameters of a study (Creswell, 2014; Yin, 2014). This study is restricted to students enrolled at the University of Texas at El Paso, a large Hispanic Serving Institution. The participants included degree-seeking students who were enrolled in Intermediate Algebra and were placed on academic probation during spring 2016, 2017, or 2018 semester and consequently exited academic probation to enroll in college the following fall term.

Limitations

The following limitations are inherent in the study:

Data Collection. It is assumed that the university's data is accurate and that student perceptions and factors that lead to exiting academic probation can be compared and analyzed.

The population. It is assumed that there will be limits on the generalizability of the findings given that the students and data are from one large Hispanic Serving Institution.

DEFINITION OF TERMS

- **Academic Probation** – At the University of Texas at El Paso, where this study was conducted, academic probation describes a student's academic progress, specifically a student's academic standing, when their cumulative grade point average (GPA) goes below 2.0 (UTEP, Academic Catalog, 2019).

- **Academic Progression** – Academic progression occurs when students make successful academic progress consistent with the college's academic standings.

- **Academic Suspension** – Academic suspension occurs when a student's GPA falls below the required 2.0 semester GPA requirement while on academic probation is prevented from enrolling the next term.

- **At-Risk Students** – A student is considered at risk when there are demographic factors present that increase their vulnerability to academic difficulties.

- **Completion** – A student is classified as having completed an academic degree or certificate requirements, as established by the institution, are met, and a credential is awarded.

- **Developmental Education** – "Developmental education is a comprehensive process that focuses on the intellectual, social, and emotional growth and development of all students. Developmental education includes, but is not limited to, tutoring, personal/career counseling, academic advisement, and coursework" (National Organization for Student Success, n.d.).

- **Eligible to Enroll** – Students eligible to enroll are in good academic standing and can enroll in an academic term.

- **Full-Time Equivalent Enrollment** – The full-time equivalent (FTE) of students is a single value representing the combination of full-time and part-time students enrolled at an institution.

- **Hispanic Serving Institution** – A Hispanic Serving Institute is an "institution of higher education that has an enrollment of undergraduate full-time equivalent students that is at least 25%, Hispanic students, at the end of the award year immediately preceding the date of application" (U.S. Department of Education, n.d.).

- **Hispanic** – Hispanic refers to people who communicate predominantly Spanish or are descendants of Spanish-speaking countries.

- **Intervention** – An intervention is the intentional policies and programs designed to increase students' success as defined by persistence, retention, and completion.

- **Persistence** – Persistence refers to the act of students working towards an educational goal by continuing to enroll in subsequent terms.

- **Latino** – Latino denotes geography and specifically refers to people from Latin America, including Central America, South America, and the Caribbean

- **Open Access or Open Admission** – Open access or admissions refers to a type of admissions process where a student with a GED or high school diploma can attend. Moreover, "with guaranteed acceptance, open admissions policies are all about access and opportunity: any student who has completed high school has the option of pursuing a college degree" (Grove, 2018).

- **Retention** – Retention is the percentage of students who enroll at the institution from one term to the next.

- **Remedial Courses** – The "instruction designed for students deficient in the general competencies necessary for a regular postsecondary curriculum and educational setting" constitutes remedial courses. (CCA, 2017, p. 26).

- **Support Services** – Support Services are those actions provided by an institution to help students be academically successful. Available student support services that are intended to help students be academically successful.

- **Student Success** – Student success is "How well students are prepared to accomplish their current and future academic, personal, and professional goals through the development of knowledge, a sense of responsibility and self-reliance, and a connection to the college and wider community" (Nazareth College, 2014).

- **Wraparound Services** – Comprehensive support services including academic advising, academic support, and planning, meeting basic needs such as food and safety, tutoring, mental health services, career planning and services, and student financial services (Achieving the Dream, n.d., p. 3)

ORGANIZATION OF THE STUDY

This dissertation includes Chapters One to Five: Chapter One is the introduction to the case study; Chapter Two is the literature review; Chapter Three presents the methodology used to investigate this phenomenon; Chapter Four includes the analysis and findings of the investigation; and Chapter Five presents a discussion of the results, conclusions, and recommendations.

Chapter One introduces the study's research problem, and the purpose provides a historical context and operational definitions. Chapter Two encompasses the literature review and explains the foundational, conceptual, and theoretical framework that helps produce the research. It provides a synopsis of persistence and student success theories focusing on underprepared students, Hispanic Validation Theory, and belonging.

Chapter Three presents the methodology of the case study and includes the profile of the academically at-risk student population at the University of Texas at El Paso. It consists of a definition of qualitative research and an explanation of variables and metrics, descriptions of qualitative features, collection and analysis of data, and the clarifications of the limitations and delimitations of the design. Chapter Four details the qualitative results and provides an analysis of the data. Chapter Five explains the findings' relationship to the research questions, includes a discussion of the results, conclusions, and recommendations for future research.

SUMMARY

This chapter provides background for the case study and includes a thorough overview of the research problem. It includes information on the growth and economic impact of Hispanics and describes the effect of their low graduation rates on the economy. Additionally, a detailed description of the completion agenda, underprepared students, and academic probation is given. This study's intention is two-fold: (1) to identify what activities help students on academic probation exit probation and (2) to determine if a sense of belonging allows students to persist through academic probation. This is accomplished by interviewing underprepared Hispanic students who persisted through academic probation. A deeper understanding of the link between student engagement and academic probation is learned via an analysis of student perceptions on factors contributing to their success. The result of this qualitative study is expected to identify

strategies that help Hispanic underprepared students overcome academic probation and to confirm that a sense of belonging helps students persist.

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION

Student persistence has been extensively studied in response to increasing concern about high attrition rates among students who enter higher education. During initial studies, all at-risk students were generalized into one common population. However, based on the literature, there are barriers specific to the Hispanic student population. As such, understanding what prevents students from completing a degree, particularly for minorities, is a high priority for institutions across the nation. The National Center for Education Statistics 2018 data shows that the six-year graduation rate for students enrolled in 2011 at four-year public institutions was 60.4% (NCES, 2018a). When students enrolled into open admissions institutions, the graduation rate plummeted to 30.7%. Furthermore, when the students at open admission institutions were Hispanic, the six-year graduation rate fell to 25.3% (NCES, 2019). These low persistence rates concern both students and society (Barnett, 2008, p. 98). It is a concern for students because they fail to accomplish their educational and career goals, thus impacting their lives and livelihood. It is a concern for society because college-educated citizens contribute to society's social good (Barnett, 2008, p. 98). Barnett discussed Pascarella and Terenzini's (2005) work in which they conducted a comprehensive analysis of existing literature regarding the benefit of attending college. Barnett states that Pascarella and Terenzini (2005) summarize the personal advantages associated with attending college as:

> Significant cognitive gains, especially in verbal ability, gains in knowledge and critical thinking, greater ability to deal with complexity, increase intolerance, aesthetic

> sensibility, and moral development…and greater encouragement of their college attendance, better health, and improved sense of well-being. (Barnett, 2008, p. 98)

It is important to understand the research of Pascarella and Terenzini because they have provided a "major and enduring contribution to the literature on how college affects students" (Braxton, 2016, p. 1062). Since 1991, they have produced three volumes of *How College Affects Students* in which they meticulously review the empirical research conducted. Volume one, written in 1991, focused on research conducted between 1967 and 1989 and was titled *Findings and Insights from Twenty Years of Research*. Volume two, written in 2005, focused on research conducted between 1989 and 2002 and was titled the *Third Decade of Research*. Lastly, volume three, written in 2016, focused on research conducted between 2002 and 2013 and was titled *21st Century Evidence that Higher Education Works*. In a review of the trilogy, Braxton (2016) stated that "no other books make such an important contribution" to higher education (p. 1059). With all three volumes, Pascarella and Ternzini collected research that addressed six questions. Braxton (2016) summarizes these questions as:

1. What evidence is there that individuals change during the time in which they are attending college? (Change during college)
2. What evidence is there that change or development during college is the result of college attendance? (Net effects of college)
3. What evidence exists that attending different kinds of postsecondary institutions has a differential influence on student change and development during college? (Between-college effects)
4. What evidence exists that engaging in different experiences in the same institutions is associated with student change and development during college? (Within-college effects)
5. What evidence is there that the collegiate experience produces conditional, as opposed to general, effects on student change or development? (Conditional effects of college)
6. What are the long-term effects of college? (p. 1059)

Thus, going to college has many benefits. However, it is all too apparent that many students leave college in their first year, and many of them leave before getting a degree or certificate. When trying to explain students' departure from college, scholars emphasize the importance of student integration and involvement in college (Barnett, 2011, p. 193). While student involvement is important for all students, it plays a significant role for Hispanic students.

Nora et al. (2015) conducted a systematic review of research on the contributing factors for low Hispanic completion rates. They found that while college graduation rates have risen, Hispanic graduation rates lag behind other groups. The low graduation rate is referred to as the "Latino educational crisis" (Nora et al., p. 250). NCES (2018d) showed that of the 2011 cohort, only 55% of Hispanic students graduated from four-year institutions in six years. Only 27.9% of the students graduated in six-years if the institution had open admissions (NCES, 2018d). Thus, institutions must identify the barriers keeping Hispanic students from accomplishing their academic goals.

Literature shows that two barriers that contribute to Hispanic students dropping out of college are that they are more likely to be underprepared for college and once there, many of them wind up on academic probation. The purpose of this case study is to learn how underprepared math students who are on academic probation at a four-year Hispanic Serving Institution (HSI) succeed in getting off academic probation. If information can be garnered on what works, then programs and policies can be put in place that contribute to student success.

To study this student population and problem, one must first understand retention models applicable to Hispanic students. Burke (2019) conducted a literature review of retention models to help educators understand the existing theories focused on helping students succeed and improve retention. Burke (2019) defined retention as "the continued enrollment of a student from

the first year to the second year" (p. 1). He further described persistence as students continued enrollment from the second year to graduation (Burke, 2019, p. 1). Completion is defined as when a student has completed a degree or certificate. Institutions must understand how to help retain students because the higher the retention rate, the more students persist and ultimately graduate. This literature review will focus on retention models, characteristics of Hispanic students, and the underlying theories that have been proven to help retain Hispanic students.

RETENTION MODELS

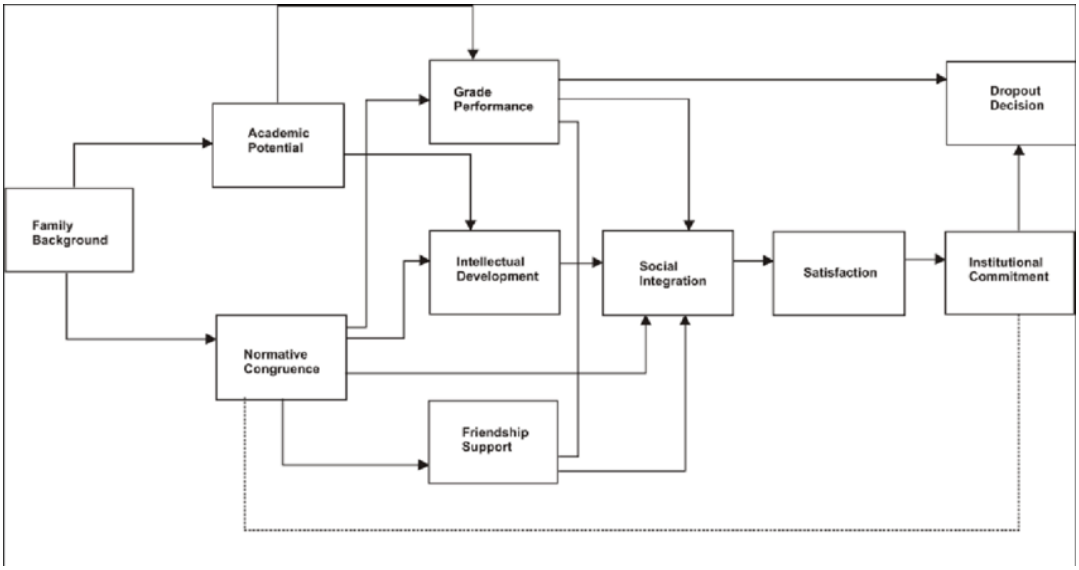
For over 40 years, those working in higher education have studied retention and persistence to understand how to help students complete their degrees. Completion is one of the most critical issues faced in higher education because "as students fail to persist at higher education institutions, there are impacts on both the academic and social environments" (Burke, 2019). Since the research of Spady's *Undergraduate Dropout Process Model* in 1970, Tinto's *Model of Student Departure* in 1975, and Astin's *Theory of Student Involvement* in 1984, researchers have broken down the complexity of retention and persistence to determine what works.

SOCIOLOGICAL MODEL OF THE DROPOUT PROCESS

William Spady proposed that having clear and realistic goals and having interests compatible with the institution are two things impacting a student's decision to stay in school. His model, the *Sociological Model of the Dropout Process*, suggests that grades and social integration play a large part in students staying in school. He stated that students succeed when they have extrinsic and intrinsic rewards. Extrinsic rewards are tangible; it is a physical item, or something physically given to one for accomplishing a goal. For example, earning good grades is

a reward for studying hard. Intrinsic rewards are intangible, a sense of achievement, or self-satisfaction. Spady (1970) identified intrinsic rewards as meaning normative congruence and social integration. He defines normative congruence as when students' attitudes, interests, and personality dispositions are compatible with the institution's fundamental values, such as the belief equity and equality are vital to the institution's success (Spady, 1970, p. 77). Additionally, Spady defines social integration as the "establishment of close relationships within the system" or rather building relationships (1970, p. 77). Figure 1, depicted below, shows the importance of students having like-minded attitudes with the institution and the importance of building relationships on student retention.

Figure 1: Spady Sociological Model of the Dropout Process



(Spady, 1970, p. 79)

Spady shows with his model that family background, academic potential, and normative congruence impact a student's likelihood of staying in school. However, Spady stresses that the dropout decision is also related to the grades the student earns. Spady (1970) states that "a large proportion of low performers become dropouts as the result of institutional grading standards and

policies" (p. 65). In other words, students who are placed on academic probation are likely to drop out of school. In Spady's model, the arrow moving from grade performance to dropout decision is an absolute condition rather than a relationship between variables (Spady, 1970, p. 79). It is reserved for those whose academic performance is so low that there is no alternative but to withdraw from school or be placed on suspension by the institution. The last thing to note is that in Spady's model, grade performance, intellectual development, friendship support, and social integration flow into student satisfaction. When students are satisfied with how things are going, feel as if they belong, and succeed academically, they are more likely to persist.

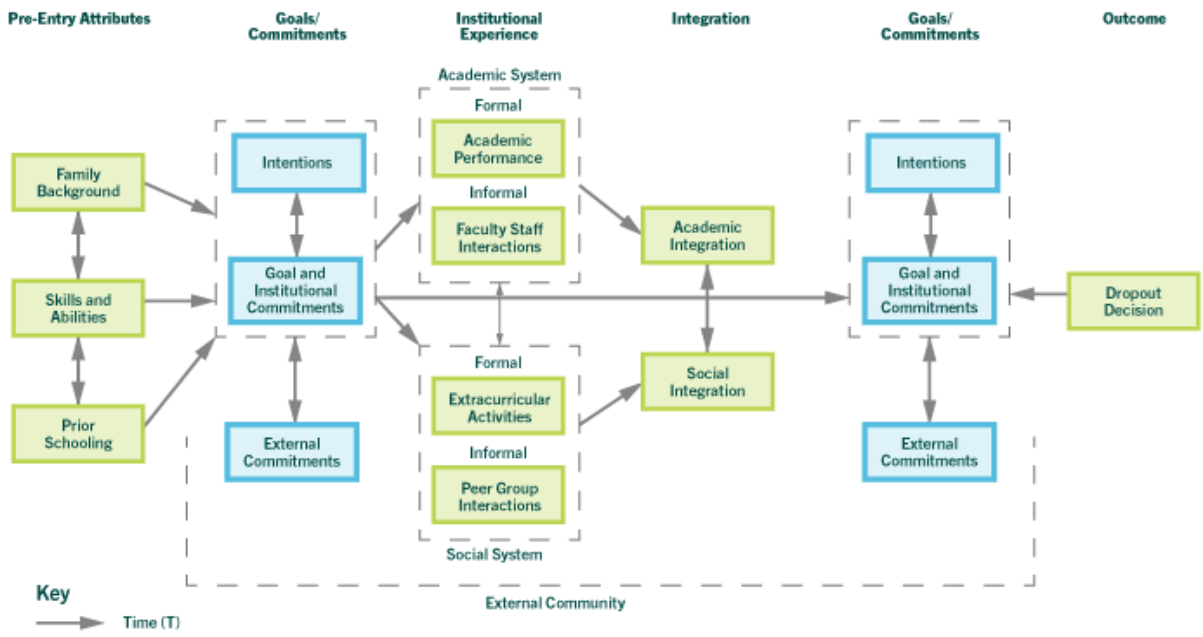
MODEL OF STUDENT DEPARTURE

Tinto's *Model of Student Departure* (1982, 1993, 2017) proposes that student integration plays a critical role in persistence. The model posits that both formal and informal student integration into academic and social systems is needed for students to persist through graduation. The *Model of Student Departure* also states that "lack of integration rises from two sources – incongruence and isolation" (Ashar & Skenes, 1993, p. 91). Incongruence is defined as where because of poor social interaction, "individuals perceive themselves as being substantially at odds with the institution" (Tinto, 1982, p. 53). Tinto's retention model proposes that the "stronger the individual's level of social and academic integration, the greater his or her subsequent commitment to the institution and the goal of graduation" (Pascarella et al., 1986, p. 155).

Students arrive on campus with a history. Each has a unique family background, educational background, and a set of skills and abilities that play a part in setting their goals and making commitments. It is relationships, however, that impact a student's ability to integrate. Tinto's Retention Model reflected below demonstrates how institutional experience plays a large

part in academic and social integration. When students integrate into the academic environment, both academically and socially, they are more apt to feel as if they belong. Figure 2 shows that this sense of belonging impacts students' decision to stay in school or drop out.

Figure 2: Tinto's Institutional Departure Model



(Kinsey, 2017)

Retention and persistence are necessary aspects of completing a degree; however, students view them very differently than institutions (Tinto, 2017a, p. 2). Universities look at retention and persistence by asking what they can do to help student retention. Students, conversely, think in terms of persistence and completing their degree. Vincent Tinto (2017a) stated that these differing views are not trivial and must be addressed to help students' complete (p. 2). Thus, over the past few decades, an essential part of the research has been for institutions to understand their environment from the student's perspective to create programs that help students persist.

THEORY OF STUDENT INVOLVEMENT

Alexander Astin's *Theory of Student Involvement* posits that the more students are engaged in an institution, the higher chance they will remain enrolled. Astin's core concepts are composed of three elements: inputs, environment, and outcomes. Input refers to the student's demographics and background and previous experiences that a student brings to the college. Environment refers to the student's experiences during college, and outcomes refer to the student characteristics, knowledge, attitudes, beliefs, and values that exist after a student has graduated college (Astin, 1984). Astin suggests that student involvement during the college years plays a large role in how students change and develop throughout their academic careers. He defined involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p. 518). He further defines involvement as an action or something a student actively does. The *Theory of Student Involvement* has five basic principles:

1. Involvement refers to the investment of physical and psychological energy in various objects (p. 519).
2. Involvement is continuous, and the amount of energy invested varies from student to student.
3. Student involvement has both a quantitative and qualitative nature. For example, quantitative aspects of student involvement are a students' GPA, the number of hours a student spends studying, or when a student passes a test. Qualitative involvement refers to such things as understanding a course reading assignment, working with a group of students on a project, or classroom discussions.
4. What a student gains from being involved (or their development) is directly proportional to the extent to which they were involved – both quality and quantity (Astin, 1984, p. 519).
5. An institution's policies and practices' effectiveness are directly related to that policy's capacity or practice increasing student involvement (Astin, 1984, p. 519).

Astin's theory concentrates more on the behavioral processes that facilitate student development. Furthermore, Astin states that *fit* is important because it is easier for students to

become involved when they feel like they belong to the institution. Thus, to improve retention, students must feel like they fit in and belong at the institution. Astin also suggests that it is more important for institutions to view students' time and energy as institutional resources that the institution can influence by creating policies and programs that reinforce student belonging, motivation, and behavior. In other words, the institution is partly responsible for helping the student feel as if they belong at the institution.

Spady, Astin, and Tinto's work on student retention has been critical for institutions to understand the complex issue of student persistence. While each theory stresses a unique view of student retention, all the theories share and highlight the importance of a student's alignment with institutional goals, their sense of belonging to the institution, and the significance of relationships built with faculty, staff, and peers in increasing persistence. To understand why students leave, institutions must understand their impact and influence on students. They must purposefully build engagement opportunities for students that address their needs and help them persist to degree completion.

CHALLENGES TO RETENTION MODELS

Since the development of Spady, Tinto, and Astin retention models, much has been learned about why students drop out, particularly in retaining minority students. While each model is well-developed, respected, and generalized, each theory is not without its faults. Researchers such as Hurtado and Carter (1997), Nunéz (2009), as well as Rendón et al. (2000) have challenged the models of both Spady and Tinto, critiquing them for lack of clarity on how the models apply to students of color.

Both Spady and Tinto's models focus on integration and imply that for "students of color to succeed, they must conform to universities' institutional norms…. students of color must fully

separate from and discard affiliations to their families and communities" (Nunéz, 2009, p. 47). Hurtado and Carter challenged this belief and tested the models to understand if Spady and Tinto's explanation of integration rang true for minority students. Hurtado and Carter (1997) proposed that integration could "mean something completely different to student groups who have been historically marginalized" (p. 326). Hurtado and Carter also suggested that Tinto's definition of integration does not value culturally supportive alternatives for student participation in college but rather emphasized mainstream activities that may not foster Hispanic student success (Johnson et al., 2007, p. 526). Ultimately, Hurtado and Carter found that for Hispanic students, maintaining a relationship with family was an essential factor in transitioning to college successfully (1997, p. 339).

Rendón et al. (2000) challenged Tinto's Model of student departure because it did not consider non-white students' experience. Tinto's Model of Student Departure is based on the Interactionalist Theory with close ties to the Assimilation/Acculturation perspective. The Interactionalist Theory is "concerned with the impact of person- and institution-related characteristics on a particular phenomenon" (Rendón et al., 2000, p. 128). Tinto (1993) noted that his persistence model represents students and institutions continually interacting with each other formally and informally (p. 136). Persistence is dependent on the amount to which students become integrated into the social and academic environments.

Furthermore, Tinto places the responsibility of fitting in and feeling like a valued member of the institution on the students. Institutions have little to do with the process except provide opportunities for student engagement. This philosophy is defined by the assimilation/acculturation perspective whereby "students can avoid social alienation by becoming fully absorbed (assimilated) or adapted (acculturated) into the dominant culture"

(Hurtado, 1997; Rendón et al., 2000, p. 128). Researchers have questioned this thought process and challenged the assumption that minority students must separate from their cultural identities to take the responsibility of becoming incorporated into the colleges' academic and social fabric to succeed.

Current thinking suggests that minorities can move fluently between the academic culture and their own. Hispanic students have shown that they can adjust to a new environment while honoring their past. Moreover, scholars have stated that higher education institutions must transform their academic and social cultures to accommodate more culturally diverse students (de Anda, 1984; Hurtado, 1997; Kuh & Whitt, 1988; Rendón et al., 2000). Rendón et al. (2000) pointed to Hurtado's work on social psychology that "advocated understanding cultural transformations, as in the case when students from one group enter the sphere of social engagement of another group, requires not an assimilation/acculturation framework but a social engagement model" (p. 149). Institutions have a responsibility to understand and embrace different cultures to ensure that programs and policies are in place that helps rather than hinder minority success. For Hispanic students, engagement is a critical factor in their retention and persistence. The Hispanic culture need not be forgotten in higher education but appreciated and honored for its uniqueness.

CHARACTERISTICS OF HISPANIC STUDENTS

To understand how to increase the completion rates of Hispanic students, it is important to understand the Hispanic culture and how that impacts their decision to stay in college. By 2023, the number of Hispanic students in college is expected to rise by 30% (Allison & Bencomo, 2015, p. 56). Osei-Kofi and Rendón (2005) state that "Latinos now represent a powerful force that cannot be ignored" (p. 251). Hispanic students generally can be characterized

as primarily community college students, older than traditional-aged students, first-generation, low-income, academically underprepared, have poor English language skills, and must navigate the unfamiliar climate of American Higher Education (Osei-Kofi & Rendón, 2005, p. 251). Thus, Hispanic students are often described as non-traditional students.

Traditional students come from families with a history of college attendance, are from middle and upper-class families, have confidence that they can handle college, and grew up with going to college as a part of their conversations and expectations. Non-traditional students, as defined by Rendón and Muñoz (2011), struggle with the decision to attend college, weigh the benefits of attending college to working full-time to help supplement the family income, worry that they are "not college material," and come from communities where there are few college graduates (p. 13). Rendón (1994), Jalomo (1995), and Terenzini et al. (1994) found that involvement is difficult for non-traditional students due to competing demands. Non-traditional students lack role models and are often unaware of opportunities and resources because they have no one to guide them; they do not know what questions to ask or where to ask them. Once non-traditional students have decided to attend college, the transition can be daunting and overwhelming.

Familism

Hispanic students are generally described as non-traditional students and have unique characteristics, such as their culture, that contribute to their attending and staying in school. The Center for Advanced Research on Language Acquisition (CARLA) defines culture as "the shared patterns of behaviors and interactions, cognitive constructs, and affective understanding that are learned through a process of socialization" (2020). CARLA uses Banks and Banks's (1989) definition to further clarify culture as

> The essence of a culture is not its artifacts, tools, or other tangible cultural elements but how the members of the group interpret, use, and perceive them. It is the values, symbols, interpretations, and perspectives that distinguish one people from another in modernized societies; it is not material objects and other tangible aspects of human societies. People within a culture usually interpret the meaning of symbols, artifacts, and behaviors in the same or in similar ways. (Center for Advanced Research on Language Acquisition, 2020)

The Hispanic culture, particularly the family's impact, plays a significant role in Hispanic college students' success or failure. Allison and Bencomo (2015) state that "family is of the utmost importance in the Hispanic culture; it has been described as the most important factor influencing the lives of Hispanics" (p. 57). This family dynamic is referred to as familism.

Familism, as defined in the 1950s, is the universal concept referring to "strong in-group feelings, emphasis on family goals, common property, mutual support, and the desire to pursue the perpetuation of the family" (Calzada et al., 2012, p. 1697). Since then, many researchers have studied the effect of familism on children and students and, for the most part, have found positive effects. Valdivieso-Mora et al. (2016) studied the relationship between familism and mental health of Hispanic children and defined familism as the "cultural value that one's family is expected to provide necessary emotional and instrumental social support when needed" (p. 2). Valdivieso-Mora et al. (2016) stated that there are three measures used to describe familism: (1) attitudinal, (2) behavioral, and (3) structural (p. 2).

Attitudinal familism measures a person's thoughts and feelings regarding support, obligations, and reverence towards their family. Attitudinal familism elicits feelings of loyalty, solidarity, and reciprocity among family members. It is comprised of "four core components: (1) belief that family comes before the individual, (2) familial interconnectedness, or the connections to both immediate and extended family members (3) belief in family reciprocity; referring to the effort one exerts to balance the give and take relationship with the family, and (4) belief in familial honor" or the worthiness and respectability family members are afforded and its effects

on the social standing and self-evaluation of the person within the family (Calzada et al., 2012, p. 1697). *Behavioral familism* is "expressed in everyday actions, or major decisions, informed by one's attachment to family ties" (Desmond & Turley, 2009, p. 314). It is the day-to-day activities and decisions that Hispanic students make because of their family ties. *Structural familism* refers to the physical proximity to family. As noted by Calzada et al. (2012), it is not uncommon for Hispanic students to live at home while attending college.

To further this work, Desmond and Turley's (2009) research on the gap between white and Hispanic college applications showed that family impacted the decision to apply to college for Hispanic students. It was the sense of responsibility to the family for college-bound students and the support they receive from their families that drove their decision whether to apply to college or not. More importantly, it played a critical role in their decision not to attend college far from home. In many cases, Hispanic parents place demands on students, such as caring for a younger sibling or contributing to family income, which creates a strong sense of responsibility and obligation. As such, Hispanic students are hesitant to attend college far from home without taking family obligations into account. The conflict of balancing family responsibilities versus college demands can leave students conflicted and unsure of their priorities. This creates a situation where Hispanic students experience dueling responsibilities between the need to honor family commitments and their desire to participate in college. I can also limit the amount of engagement and involvement students can have at the institution.

The more engaged students are at the institution, the more likely they are to persist. When students have pulled away because of family obligations, there is little time left to engage in institutional activities or events. Spady, Tinto, and Astin stress the importance of the institution's relationship with the student to retain students. Institutions must ensure the environment is

conducive to students building relationships on campus, student learning, growth, and development. That support is given in multiple ways and in different methods to all who come to campus.

First-Generation

Desmond and Turley (2009) found that many Hispanic students came from families where they are the first to attend college. Described as students whose parents did not obtain a four-year college degree, first-generation students "often face challenges in accessing postsecondary education, succeeding academically once they enroll, and completing a degree" (NCES, 2018c, p. 2). Nicole Reyes and Amaury Nora (2012) consolidated research on first-generation Hispanic students and noted that only one in 10 Hispanic adults 18–29 hold a college degree (p. 2). Additionally, only 65% of prospective first-generation Hispanic students who planned to attend college actually enroll at a four-year institution within two years of graduating from high school (Reyes & Nora, 2012, p. 10). Lastly, NCES found that 33% of first-generation students left college within three years of enrollment. Still, only 14% of students whose parents had a bachelor's degree left college within three years of enrollment (NCES, 2018c, p. 4).

Generally speaking, first-generation Hispanic students are more inclined to be characterized as coming from lower-income families, are academically underprepared, work full-time, attend college part-time, are older, and have dependent children (Giancola et al., 2008, p. 216; Rendón, 2002, p. 644; Reyes & Nora, 2012, p. 11, Terenzini et al., 1996, p. 8). Reyes and Nora (2012) further define first-generation students as lacking confidence in their ability to handle school demands, have less parental support, and encounter a more significant number of barriers (p. 8). Additionally, first-generation students struggle to transition to college life, in part, because of a lack of understanding of the college environment. College knowledge is key to

navigating higher education. Students whose parents received a four-year degree understand how college works and can help their son or daughter navigate college. For first-generation Hispanic students, that help is not there because no one in the family has attended college nor can guide them through the college experience.

First-generation Hispanic students generally take fewer credits, complete fewer courses, have lower grades, and have lower levels of extracurricular involvement and academic integration (Reyes & Nora, 2012, p. 12; Terenzini et al., 1996, p. 10). Reyes and Nora found that first-generation Hispanic students started college with a lower confidence level in their abilities, and by increasing their involvement and engagement, their confidence level rose. Reyes and Nora (2012) stated that Hispanic students "derive greater outcome benefits from extracurricular involvement and peer interaction" (p. 130). Nora and Cabrera (1996) found that social interactions and academic involvement predicted a stronger sense of belonging in Hispanic students and counteracted the negative influences of racial discrimination on campus and in the classroom. Furthermore, Hurtado (1997), Carter (1997) and Nunéz (2009) found that for Hispanic students, interactions with other students and faculty contributed to a higher sense of belonging; including participation in social-community organizations and informal, out-of-class discussions (Hurtado & Carter, 1997; Nunéz, 2009; Reyes & Nora, 2012, p. 14). Institutions must help Hispanic students build strong relationships because it impacts their sense of belonging and academic success. Without these connections, first-generation Hispanic students are at greater risk of not completing their degrees.

Scholars have spent years studying Hispanic college students, and their research has paved the way for institutions to understand the Hispanic heritage and its impact on student completion. Nora et al. conveyed the importance of understanding Hispanic students' completion

rates. Reyes and Nora (2012), along with Giancola et al. (1996), gave a clear understanding and description of first-generation Hispanic students. But it was Rendón (1994) who showed that non-traditional Hispanic students need validation and help navigate college and institutional support based on their unique characteristics.

THEORETICAL PERSPECTIVES

Validation Theory

Spady, Tinto, and Astin's student retention models have been used for decades to understand the importance of students being engaged in the institution to complete their degrees. In attempting to explain student departure from college, Spady, Astin, and Tinto emphasized the importance of integration and involvement. According to Astin (1984), "students learn by becoming involved" (p. 133). Tinto (1993) defines integration as a sense of "competent membership," resulting from student interaction with faculty and staff (p. 208). Spady posited that the interaction between students and their college is an important factor in assimilating successfully in academic and social environments (Spady, 1970, p. 77). Their research indicated that the more time and effort students spend on learning and engaging in their education, the greater the satisfaction and achievement they experience, including academic success.

Rendón (1994) took this belief and looked at it from the perspective of the non-traditional student. She posited that these theories did not work for non-traditional students because of their unique characteristics. Rendón challenged the underlying principle that students were expected to become engaged and involved on their own and that the institution's role was passive, meaning it merely affords students the opportunity and mechanisms to get involved (Rendón, 1994, p. 43). Rendón 's (1994) research showed differences, particularly that "non-traditional students do not perceive involvement as *them* taking the initiative. They perceive it when

someone takes an active role in assisting them" (p. 44). Furthermore, Rendón (1994) showed that the role of the institution is active, meaning that faculty, staff, and administration must purposefully and with intent reach out to students and design activities that encourage "active learning and interpersonal growth" (p. 44).

Rendón developed the Validation Theory in 1994 when she studied non-traditional students' transition to college as a researcher in a large qualitative study on how student involvement affected student learning. In her research, the Transition to College Project, a total of 132 first-year students participated in focus groups to discuss their decisions to attend college, their expectations for it, and their perceptions of the effect college were having on them (Barnett, 2008, p. 7). A diverse set of students were selected from four diverse college locations. The diversity included gender, racial/ethnic backgrounds, and residences (on-campus or commuting).

Rendón found that retention models do not consider the experiences of first-generation, low-income, and minority students who see college as invalidating (Osei-Kofi, 2011, p. 121). Rendón posited that students of color, low-income, and first-generation students "encounter subtle and overt forms of racism, sexism, and oppression" on college campuses because of the underlying need to create programs and policies based on the traditional student (Rendón & Munóz, 2011, p. 13). Rendón (1994) discovered in her research with non-traditional students that "when external agents took the initiative to validate students, academically and/or interpersonally, students began to believe that they could be successful" (p. 40).

Validation is a way of communicating; it is the ability to look at and understand another person's perspective. It acknowledges and accepts another person's thoughts, feelings, perceptions, and behaviors as understandable (Hall, 2012). Validation refers to the intentional, proactive affirmation of students, both in and out of class, by faculty, staff, and administrators to

(1) validate students as creators of knowledge, (2) recognize students as valuable members of intuitions, and (3) foster personal development and social adjustment (Rendón & Munóz, 2011, p. 12).

Martinez (2020) supports this assertion. As a first-generation Hispanic student and doctoral student, she examined how Hispanic completion rates could be improved. She found that when faculty, staff, and administration worked to "increase a students' sense of belonging and validate that they are worthy of belonging in our colleges and universities," it increased the number of Hispanic students completing their degree (Martinez, 2020, p. 23). Additionally, Nora et al. (2011) analyzed what validating students mean. They found that while there are many forms of support for students, each has an underpinning of validation. Nora et al. (2011) stated that "a sense of caring on the part of a significant other, their acceptance as human beings, a sensitivity on the part of the instructor and an affirmation as valuable contributors to the learning that is taking place in the classroom" is a critical step in validating students (p. 35). It is also an important aspect of understanding Hispanic students' persistence and completion of their degree (p. 35). Validation, then, is key to Hispanic students' persistence and degree completion. Laura Rendón believed that given the right conditions and environments, non-traditional students could be successful (Rendón, 1994, p. 47).

Validation Framework

Rendón's Validation Theory provides a framework that institutions can use when working with non-traditional students, including underprepared Hispanic students. The framework has six elements that are the foundation of the theory. The first element is that "validation is an enabling, confirming and supportive process initiated by in- and out-of-class agents that foster academic and interpersonal development" (Rendón, 1994, p. 44). The onus of

reaching out to students is on the institution. Hispanic students struggle with navigating college, and this is truer when the students are underprepared, low-income, or first-generation. These students are unlikely to reach out to their professors for help, attend tutoring sessions, attend faculty office hours, or seek advisors' help.

In most cases, it is because they will be working off-campus, attending to family obligations, or do not want to be viewed as stupid or lazy. Therefore, it is imperative that validating agents proactively reach out to students to provide support and encouragement. Faculty and staff must look beyond the classroom to view the student holistically and identify barriers to success. Rendón shows that it is in taking the extra step to reach out to students they see struggling is what is important in helping students transition to college.

When working with Hispanic students, faculty and staff should not wait for students to make the first attempt at engagement. They should intentionally make the first step by (1) calling students when they miss class, (2) scheduling time to meet with students one-on-one, (3) providing students with opportunities to work with their peers, (4) providing timely feedback on their work, and (5) supporting students with their quest for knowledge. While some have questioned if validating students is akin to enabling students, Rendón and Munóz (2011) stress that validation is about assisting students to "believe in their ability to learn" (p. 18). Moreover, in studying the influence of validation on a students' sense of integration in college, Barnett found that for Hispanic students, "validation may be a more important influence on student success than integration or involvement" (Barnett, 2011, p. 101).

The second element is when validation is present, "students feel capable of learning; they experience a feeling of self-worth and feel that they, and everything they bring to the college experience, are accepted and recognized as valuable. Lacking validation, students feel crippled,

silenced, subordinate, and/or mistrusted" (Rendón, 1994, p. 44). Hispanic students need to believe in themselves and their ability to do college work, for, without this belief, they quit. Hispanic students also need to realize that they have the ability, strength, determination, and skills to be a successful college student. Rendón stresses that institutions must understand this notion and put policies and pedagogy in place to allow for validation to occur. For example, institutions can offer events and activities highlighting the Hispanic culture, or faculty can "affirm students' cultural experience and voice by having students write about topics rooted in students' personal histories" (Rendón & Munóz, 2011, p. 19).

The third element, "like involvement, validation is a prerequisite to student development" (Rendón, 1994, p. 44). Meaning, that for non-traditional and Hispanic students, the more consistently they experience validation, the more likely they are to believe in themselves and feel confident that they can learn. Thus, feeling as if they have the wherewithal to participate and get involved in college.

The fourth element is that "validation can occur both in- and out-of-class" (Rendón, 1994, p. 44). In-class validation agents include faculty, peers and peer leaders, lab instructors, tutors, and teaching assistants. Out-of-class validating agents can be significant others, family, friends, or faculty and staff who work with students outside of the classroom. In other words, validation can happen anywhere, anytime, and in any place.

The fifth element is "validation suggests a developmental process. It is not an end to itself. The more students get validated, the richer the academic and interpersonal experience" (Rendón, 1994, p. 44). Rendón suggests that validation can and should occur during students' entire academic career because the more students are validated, the more their efficacy, academic knowledge, and interpersonal experiences grow.

Lastly, the sixth element is that "validation is most effective when offered early on in the students' college experience, during the first year of college and during the first weeks of class" (Rendón, 1994, p. 45). Hispanic students enter college with many talents, great strengths, and big dreams. They also enter college with a lack of confidence, unsure of their ability to handle college, and not knowing anyone. Validation helps students grow their confidence, believe in themselves, and build relationships.

Rendón 's Validation Theory posits that there are two types of validation: academic and interpersonal. Academic validation occurs when faculty or staff take action, in class or out of class, to assist students to "trust their innate capacity to learn and to acquire confidence in being a college student (Rendón, 1994, p. 40). The faculty's role is critical in the validation process because they are the ones who structure the class so that validation can occur (Rendón, 2002, p. 653). Examples of academic validation are listed below:

- Affirming the real possibility that students can be successful college students.
- Validating the notion that Hispanic students can be valuable contributors to the body of knowledge studied in the classroom.
- Creating a Familia learning atmosphere
- Providing the opportunity for students to witness themselves as capable learners.
- Actively reaching out to students to offer academic assistance and positive feedback.
- Providing opportunities for teamwork and validating each other's work.
- Affirming the culture of the students and the value of students' voices.
- Stressing academic strengths to build self-confidence.
- Affirming students as persons, not just students. (Rendón, 2002, p. 653)

Rendón further found that faculty who foster academic validation did so by demonstrating genuine concern for teaching students, were personable and approachable, worked

individually with students, and provided meaningful feedback (Rendón, 1994, p. 40). However, the most promising finding of Laura Rendón's (1994) study was that "faculty and staff can transform even the most vulnerable students into powerful learners who are excited about learning" (p. 46). In doing so, students gain confidence in their academic ability and transfer their skills to other classes.

Interpersonal validation occurs in and out of class when faculty and staff foster students' personal development and social adjustment (Rendón & Munóz, 2011, p. 19). It is when faculty take a proactive approach to work with students. For example, when faculty and staff recognize students' struggle and provide resources, such as mentoring, coaching, or tutoring, it helps them overcome their obstacles and become successful. Validation is seeing them around campus and asking how they are doing and how school is going. It is when faculty and staff intentionally care and are willing to contribute to a college student's academic and personal development (Alcantar & Hernandez, 2020, p. 11).

Belonging

Institutions must work "to instill in students a sense of trust in their ability to learn, to liberate students to express themselves openly even in the face of uncertainty, and to know that the way they construct knowledge is as valid as the way others construct knowledge" (Rendón, 1994, p. 47). It is never more important than during the student's first year and first weeks of school to convey the message that students belong at the institution. As such, a key aspect of validation is to help students feel as if they belong.

Definition of Belonging

In 1943, Abraham Maslow identified belonging as a basic human need. According to Maslow, to understand what motivates human beings, one must understand their needs. Maslow

put forth five hierarchical categories of needs, called Maslow's Hierarchy of Needs. The levels, in order, are (1) physiological needs, (2) security and safety needs, (3) belongingness and love, (4) esteem, and (5) self-actualization (MasterClass, 2020; Huitt, 2007). Physiological needs are the most basic human survival needs and include food and water, clothing, and shelter. Security and safety needs include protection from violence and theft, emotional stability and well-being, health, and financial security. Belongingness and love's needs speak to intimate relationships, family and friends, and the physical and emotional intimacy needed to form emotional bonds. Additionally, "membership in social groups contributes to meeting this need, from belonging to a team of coworkers to forging an identity in a union, club, or group of hobbyists" (MasterClass, 2020; Huitt, 2007).

Esteem is the ego-driven need that includes self-esteem, which refers to the confidence in one's potential for personal growth and accomplishments, and self-respect, which is the belief that a person is valuable and deserving of dignity. Lastly, self-actualization refers to achieving one's full potential. Belonging, then, is an essential human need for students. Strayhorn (2019) defines belonging, in terms of college students, as "students' perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus" (p. 4). Moreover, Strayhorn posits that a sense of belonging is relational and that those relationships are reciprocal whereby each student benefits from the group, and the group benefits from each student (Strayhorn, 2019, p. 4). Although 77 years apart, both Maslow and Strayhorn focus on building relationships and becoming a group member as critical pieces of increasing a sense of belonging.

Scholars such as Tinto and Astin put the success or failure of student persistence and retention on integration. Specifically, Tinto (1993) suggested that students' persistence was directly related to a student's integration with an institution's academic and social structures (Johnson et al., 2007, p. 526). Tinto further defined integration as engagement in the institution and that for students to become engaged, they must learn to see themselves as valued members of the community. "In other words that they matter and belong" (Tinto, 2017a, p. 3).

Astin (1984) focused on involvement instead of integration and stressed students' active participation in the learning process. Astin stated that "the greater the student's involvement in college, the greater will be the amount of student learning and personal development" (Astin, 1984, p. 528). Thus, it is important to understand the definition of belonging and its evolution over the past eighty years regarding how integration, involvement, and engagement impact belonging. Students gain a sense of belonging once they are involved and engaged at the institution, have integrated their culture with institutional culture, and feel validated for the assets and knowledge they bring to the institution. Pascarella et al. (1986) stated that the "stronger the individual's level of social and academic integration, the greater his or her subsequent commitment to the institution and the goal of college graduation" (p. 155). Because student and persistence are a large part of degree completion, institutions must take responsibility for helping students transition to college and feel like they belong. It is no longer the student's responsibility to fit in; it must be a joint effort.

Belonging and Hispanic Students

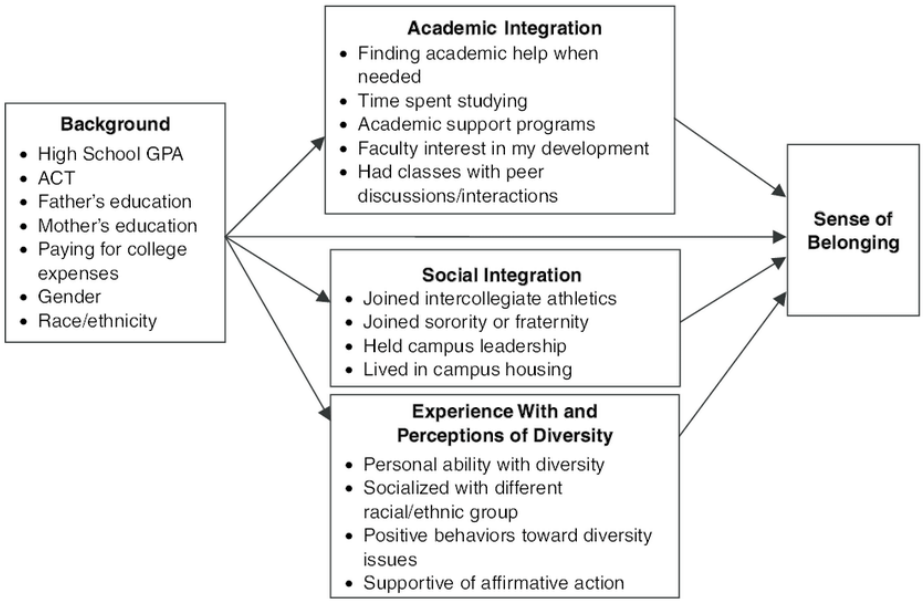
While a sense of belonging has been discussed in higher education for many years, Hurtado and Carter (1997) suggested that a students' sense of belonging is crucial in understanding how social and academic experiences impacted minorities, specifically Hispanic

students. They studied 287 Hispanic college students using structural equation modeling techniques, a "statistical analysis technique used to analyze structural relationships" (Statistics Solutions, 2020). For the study, Hurtado and Carter defined a sense of belonging as a "student's attachment to the campus community as a whole" (Maestas et al., p. 240). Controlling for gender, academic ability, and institutional selectiveness, Hurtado and Carter found that hostile environments were negatively associated with a Hispanic student's sense of belonging in college (Museus et al., 2018, p. 468).

The Hispanic students in their study showed great potential, but there was wide variability in the student's sense of belonging (Maestas et al., 2007, p. 339). This variability was attributed to a student's perception of their campus climates for diversity. Hispanic students had to learn how to build relationships with students from different racial and ethnic backgrounds. Hurtado and Carter (1997) found that merging academic and social interactions for Hispanic students increased students' sense of belonging (p. 334). In other words, engaging with faculty and peers while embracing their Hispanic culture was critical for students' sense of belonging to the institutions. For example, students who had academic discussions both in and outside of class with their peers, students who frequently talked with faculty outside of class, and students who joined campus organizations felt a higher sense of belonging. The diversity of the institutional environment and Hispanic students' interactions with a diverse student population impacted Hispanic students' sense of belonging and connectedness (Hurtado & Carter, 1997). Lastly, Hurtado and Carter found that when Hispanic students had an orientation to the institution's social, academic, and physical geographies, their transition to college was eased, and their sense of belonging increased.

Moreover, Maestas et al. (2007) studied Hispanic students' sense of belonging, hypothesized that background, or culture, played a part in a Hispanic student's sense of belonging (p. 238). They presented a conceptual framework that showed academic integration, social integration, and perceptions of diversity played a part in increasing a sense of belonging (see Figure 3).

Figure 3: Sense of Belonging Conceptual Framework



(Maestas, Vaquera, & Zehr, 2007, p. 242)

Focusing on Hispanic Serving Institutions, Maestas et al. studied students at the University of New Mexico, 33% Hispanic. As defined by the Federal Government, Hispanic Serving institutions are those institutions where at least 25% of the student population are Hispanic (U.S. Department of Education, 2020). Maestas et al. found that financial stability, the ability to pay for school, and being Hispanic had a negligible impact on students' sense of belonging. More importantly, a student's sense of belonging was impacted by participating in academic support programs, discussions, and interactions with peers, joining a sorority or

fraternity, holding a leadership position in a campus organization, living on campus, and when faculty showed interest in students' development.

Mattering

Scholars have said involvement, integration, engagement, and a sense of belonging impact a Hispanic student's ability to persist (Astin, 1984; Rendón, 1994; Schlossberg, 1989; Spady, 1970; Tinto, 1993). In her research on marginality and mattering, Schlossberg stated that "involvement creates connections between students, faculty, and staff that allow individuals to believe in their own personal worth" (Schlossberg, 1989, p. 1). These connections provide opportunities for Hispanic students to fit in at the institution, find their home and self-worth, and help them persist towards their degree.

How does one fit in the institution and find one's place? Researchers such as Schlossberg (1989), Johnson et al. (2007), Cole et al. (2020), Duenas, and Gloria (2020) have shown that mattering is a vital aspect of belonging. Mattering provides students with personal recognition and attention that they require to persist. Schlossberg (1989) defines mattering as "the feeling that others depend on us, are interested in us, are concerned with our fate, or experience us as an ego-extension exercises a power influence on our actions" (p. 3). The most elementary form of mattering for students is the feeling that another person shows interest in or notices them. Taken together, the work of Schlossberg, Cole, et al., Duenas and Gloria, and Johnson, et al. "suggests that students have a fundamental need to feel that they are an important part of the community" (Johnson et al., 2007, p. 527).

When institutions create environments that show students they matter, students are more likely to be involved. This involvement positively impacts retention and persistence, allowing more students to complete their degrees and institutions to increase the number of students who

graduate and (Astin, 1977, 1984). For no group is this more important than for Hispanic students. To counteract the Hispanic "educational crisis," institutions must focus on belonging and mattering to ensure that Hispanic students transition to college is successful (Nora et al., 2015, p. 250).

SUMMARY

Historically, Hispanic students, as a population, have not successfully navigated college. When low-income, first-generation Hispanic students enter higher education, many do not have the skills or strategies needed to navigate the new terrain. This transition can be daunting and overwhelming. Institutions face growing pressure from federal, state, and local governments and the public to increase graduation rates.

As the enrollment of Hispanic students rises, colleges are strongly committed to helping Hispanic students meet their educational goals. Institutions devote a significant amount of energy to identifying and solving the barriers that Hispanic students must overcome to achieve their academic goals. However, institutions have fallen short in improving the graduation rates for Hispanic students. By focusing on overcoming barriers and developing programs designed specifically for Hispanic students' needs, this student population's retention and persistence will rise. Thus, impacting the six-year graduation rate positively at open-access institutions. More importantly, the American dream will remain intact for Hispanic students, and the rising completion rates will help meet the nation's economy and workforce demands.

CHAPTER THREE: RESEARCH METHODOLOGY

INTRODUCTION

This case study was conducted to discover how Hispanic underprepared math students on academic probation at a four-year Hispanic Serving Institution (HSI) succeed in getting off academic probation. When Hispanic students who place into remedial coursework find themselves on academic probation, they are at risk of not completing a degree. At-risk is a term used to describe college students who have characteristics that may signify they will drop out or perform poorly in college. Examples of those characteristics have a low socioeconomic status, ethnic minorities, academic probation (Heisserer & Parrette, 2002; Swail et al., 2004), or first-generation college students (Swail et al., 2004). Furthermore, studies suggest that minority students, many of them Hispanic, are more likely to face "academic difficulties and consequently have a higher dropout rate than other students" (Gandara et al., 2012; Marrero, 2016; McPherson, 2019, p. 1; Tovar, 2015).

An overview and a deeper understanding of this group of students as it related to persistence and completion are needed to help institutions create programs and implement services that improve the likelihood that Hispanic, developmental math students complete their degree. Kelsay and Zamani-Gallaher (2014) state that "understanding the motivation and persistence of underprepared students is central to understanding their success" (p. 33). This statement is more true for underprepared students who are Hispanic and on academic probation. As such, this qualitative case study focuses on students who have experienced this phenomenon.

Background for this research, including a description of the community, the University of Texas at El Paso, and a brief history of developmental education at the University of Texas at El Paso, is provided. The research methodology is presented, and the chapter is divided into the following sections: (1) research questions, (2) rationale for using a qualitative research approach, (3) research site, (4) qualitative research design, (4) population, and sampling information, (5) data collection methods (6) data analysis, (7) ethical considerations, (9) trustworthiness, and (10) limitations.

RESEARCH QUESTIONS

1. What strategies contributed to a developmental math student's ability to exit academic probation at a Hispanic Serving Institution?
2. Does a sense of belonging impact a developmental math student's ability to exit academic probation?

RATIONALE FOR QUALITATIVE RESEARCH APPROACH

Qualitative Research

Understanding a phenomenon is at the heart of qualitative research. When a researcher wants to find out why a phenomenon is occurring, asking people is one of the best ways to do so. Gaining an in-depth understanding of what motivates, drives, or causes the phenomenon to occur is how we become a better-informed population.

Qualitative research is the "process of naturalistic inquiry that seeks an in-depth understanding of social phenomena within their natural setting. It focuses on the why rather than the what of social phenomena and relies on the direct experiences of human beings as the meaning-making agents in their everyday lives" (University of Texas at Arlington Library, 2016). Moreover, Denzin & Lincoln (2011) have stated that qualitative researchers use interpretation practices to make the world visible – "studying things in their natural settings

attempting to make sense of or interpret, phenomena in terms of the meanings people bring to them" (p. 3). Creswell and Poth (2018) further clarify qualitative research by noting that "qualitative research starts with assumptions and the use of interpretive/theoretical frameworks that inform the study of the research problem addressing the meaning individuals or groups attribute to a social or human problem" (p. 8).

Additionally, qualitative research can be used to understand a phenomenon better, gain a new perspective, or gain more in-depth information. Boddy (2016) has stated that "qualitative research often concerns developing a depth of understanding rather than a breadth" (p. 430). Marie Hoepfl (1997) said that "qualitative methods are appropriate in situations where one needs first to identify the variables that might later be tested quantitatively, or where the researcher has determined that quantitative measures cannot adequately describe or interpret a situation" (p. 3). Furthermore, Creswell and Poth (2018) state it is appropriate to use qualitative research when the researcher needs a thorough understanding of the issue or "when quantitative measures or statistical analysis does not fit the problem" (p. 45–46).

For those reasons, a qualitative research approach was used to study underprepared developmental math students in their natural setting to make sense of how they overcame academic probation at the University of Texas at El Paso. Students have unique stories to tell, each with different reasons for how and why they exit academic probation. Their stories cannot be garnered from statistical data alone; they must be gathered from students because they are the experts in their situation. Gaining an in-depth knowledge of what helped developmental math students overcome academic probation can provide institutions with strategies that may work for other students. Therefore, obtaining a complete and thorough understanding of these students and their strategies to clear academic probation is essential. Listening to students and hearing their

stories allows those who work with students on academic probation an opportunity to improve the approaches used when working with this student population.

Research Site

This research was conducted at the University of Texas at El Paso, which is in "the heart of the U.S.-Mexican border in one of the largest binational communities in the world" (The University of Texas at El Paso [UTEP], About UTEP, n.d). It serves over 25,000 students, of whom 80% are Hispanic, 50% are the first in their family to attend school, and 36% are from families with an income of less than $20,000 (UTEP, 2018; UTEP, 2020; UTEP, n.d.). The University offers 73 bachelors, 71 masters, and 22 doctoral degrees, with others in development (UTEP, 2020).

The Department of Education classifies an institution of higher education as a Hispanic Serving Institute if "a) it is an eligible institution, and (b) has an enrollment of undergraduate full-time equivalent students that is at least 25% Hispanic students" (Department of Education, 2019). UTEP is designated as an HSI because its student population is approximately 80% Hispanic.

UTEP has a mission to serve the El Paso region, which has a population of approximately 951,000 (Macrotrends, 2020). When Juarez, Mexico, and Las Cruces, New Mexico are included, the population reaches 2.7 million, making it a large urban community (Paso Del Norte, 2018; World Population Review, 2018). The World Population Review (WPR) also shows El Paso as being 80% Hispanic with a median age of 32.6 years, consisting of 51.27% women and 68% of the El Paso population speaking Spanish as their first language (WPR, 2018).

UTEP is a public university categorized as open-access, meaning that it admits at least 80% of its applicants (Doyle, 2010). UTEP's top priority is to provide access and opportunity to

people in the El Paso region and the State of Texas. Furthermore, "UTEP's mission of ensuring access is coupled with a commitment to excellence reflected in rigorous programs, which prepare students to make significant contributions to their professions, their communities, and the world" (UTEP, Vision, Mission, Goals, 2021). To accomplish this mission, UTEP focuses on its students. Teaching and learning are a prevalent part of the strategic plan where the primary focus is placed on preparing students to meet their educational and intellectual goals to become leaders of the 21st century (UTEP, Vision, Mission, Goals, 2021).

Retention and persistence are both critical to improving the number of students who graduate with a degree. Approximately 38% of first-time, full-time students graduate from UTEP within six years (UTEP, Retention and Graduation Summary, n.d). However, when a student struggles academically, the chance of that student persisting to graduation decreases. When students struggle academically and receive failing grades, they are put on academic probation. UTEP (2020) defines academic probation as when a student's grade point average (GPA) goes below the minimum GPA of 2.0. Once a student is on probation, "suspension will occur if, at the end of the probationary semester, the overall GPA remains below 2.0" (UTEP, Frequently Asked Questions, 2020).

UTEP data indicated that 5328 students enrolled during the Fall 2017 semester. Of those, 1644 of the students had an average GPA of 1.57 and did not register for the Fall 2018 semester (Center for Institutional Evaluation, Research, and Planning, Fall 2017 new UG CIERP retention data, 2020). This means that almost 30% of the incoming student cohort wound up on academic probation and did not go back to school the following fall semester thus, making academic probation a critical issue for UTEP. Moreover, UTEP data has also shown that if a student starts at the university underprepared and is placed on academic probation, it puts them at risk of not

completing a degree. The UTEP Center for Institutional Evaluation, Research, and Planning (CIERP) showed that when underprepared math students enrolled and failed their developmental math course during their first fall semester at UTEP, they were 95% more likely not to return to school the following spring semester (Roy Mathew, Personal Communication, December 3, 2020). Furthermore, CIERP found that if this same student failed more than one class, they were 98% more likely not to enroll the following spring semester. Thus, programs must be put into place that help underprepared Hispanic students transition to UTEP and achieve academic success.

UTEP Developmental Math Program

Students enter UTEP with strong academic skills and can navigate college successfully. However, students who do not start with strong academic math skills need support to complete their courses. Students, in this case, are placed into math remedial math courses to improve their skillsets. At UTEP, the success of students who place into remedial math courses is paramount. Students are encouraged to take the university study skills course. They are offered multiple programs such as summer bridges, tutoring, mentoring, peer leader programs, student support services, and study skills to help students transition to UTEP.

The Developmental Math Department's sole purpose is to design and implement programs that help underprepared math students learn the content needed to succeed in their developmental and college-level math courses. The Developmental Math Department resides in the Provost Office and has an annual enrollment of approximately 1,500 students (UTEP, WebReports, 2021). It mirrors the University's student population demographics, with about 80% of its students being Hispanic. The department offers two remedial courses, two major

specific co-requisite courses, a summer bridge program, and an extender program that provides the opportunity for students to complete their work after the semester has ended.

Texas has recognized the department as exemplary, and in 2014, the department won the Texas Higher Education Coordinating Board Star Award (Texas Higher Education Coordinating Board, 2019a, p. 12). The Coordinating Board established the Star Award in 2001 to recognize exceptional contributions toward achieving one or more of the goals outlined in Texas' higher education long-range plans (THECB, Star Award Program, 2020). Additionally, the department won the Texas Association of Developmental Education (TADE) Program of the year award in 2019. Developmental math faculty have also been honored, winning multiple teaching awards for their work with the developmental math students at UTEP. These awards are recognition of the creative and innovative work the department does to help underprepared math students succeed in learning mathematical concepts and transition to UTEP.

The Developmental Math Department supports the University's goals of access and excellence by implementing programs supporting underprepared students and promoting students' academic success. Specifically, the department is dedicated to preparing and supporting students for academic success in college-level mathematics. Traditional remedial math courses are taught in a lecture format with homework given daily, and quizzes and tests are given periodically. It can be described as marching to the beat of the drum – all students, no matter their skill level, must learn the same concepts during each class and timeframe. There is rarely time to revisit topics because each class's topics have been pre-determined by the course calendar. If a student struggles with content, it can be challenging to get caught up because when students get lost on a topic, in many instances, they also struggle with the next topic. Mathematics builds in itself, and it has been shown that if the foundation of mathematics is not

mastered, the building blocks of mathematics are not developed. Students struggle to make the necessary connections within the content material to fully understand the higher-level mathematical concepts (Wriston, 2015, p. 5)

The Developmental Math Department at UTEP uses creative course design, technology, and best practice interventions to help students succeed. The department's underlying philosophy is based on the belief that every student should have the opportunity to pursue their educational ambitions. The department's two primary goals are to provide an opportunity for efficient student completion of developmental math requirements and prepare students for college-level math success. Faculty take a holistic approach to work with students in multiple ways on individualized paths. Using a holistic approach means that faculty consider the whole student to determine what support is needed to complete their developmental math course and become a successful student at UTEP. For example, faculty consider students' physical, emotional, and social wellbeing when working with them in their class. Additionally, programs are designed to focus on student success from before entrance into UTEP to completion of their first college-level course.

By creating innovative programs and putting student success first, pass rates in Developmental Math have increased from 60% in 2005 to on average 80% in 2017 (CIERP, 2017). As an example of innovation, the department utilizes a mastery-based pedagogy. All developmental coursework is based upon differentiated placement and individualized instruction. The program uses ALEKS, the first computer system to embody Knowledge Space Theory for assessment and teaching. ALEKS is a diagnostic tool based on mastery learning. ALEKS determines quickly and precisely what students know and what they need to learn and then creates an individualized learning path to mastery. Students who enter any Developmental Math

program at UTEP use this system and take an initial assessment, which identifies their unique starting point. Because of the individual path that students take, flexible timetables for students to complete their course are created, one-on-one help with content is given, additional contact hours are required when a student gets behind, strict policies that emphasize student responsibility are given, and students are helped with time management. Additionally, because of students' individualized paths, unique programs are created that provide opportunities for students to complete their work, including a summer bridge, a two-week extension, and flexibility within the semester to work with students on a one-on-one basis.

Each spring semester, approximately 23% – 25% of students enrolled in developmental math are on academic probation and are repeating their developmental math course (CIERP, 2018). In some instances, students fail their developmental math course during the spring semester and are placed on academic suspension. An academic suspension means that the student is not allowed to register for classes at UTEP and must attend another institution to raise their GPA before they can return. Each semester students' GPA is calculated to determine their academic standing, and students can be on academic probation more than once in their academic career.

In the Fall 2017 semester, 5,328 students enrolled for classes at UTEP (CIERP, 2020). 987 (18%) of those students were placed on academic probation at the end of the semester and enrolled for classes during the spring 2018 semester (CIERP, 2018). More notably, 144 students on academic probation during spring 2018 cleared academic probation and enrolled for courses at UTEP during the fall 2018 semester (CIERP, 2020). Thus, only 14% of the students placed on academic probation during their first semester at UTEP returned the following fall. This means that 86% of the students placed on academic probation after their first semester did not return the

following fall making academic probation a critical issue for UTEP because of the impact on retention.

Additionally, when looking at developmental math students, internal departmental data shows that, on average, 50 students enrolled each spring semester were on academic probation (CIERP, 2018). Of those, approximately 21 students or 42% succeeded in passing the developmental math course to enroll in their next math course the following fall. This means that the students had raised their GPA to above 2.0 and were eligible to enroll at UTEP (CIERP, 2018). Compared to the 14% retention rate of students on academic probation for the University, students enrolled in developmental math were 28% more likely to exit academic probation.

It is in understanding how these developmental math students on academic probation during their spring semester cleared academic probation to re-enroll the following fall that information is gathered to help design programs for this population. Specifically, by gaining insight from Hispanic underprepared developmental math students on what helped them get off academic probation, policies can be created to help other students face the same situation. Thus, this qualitative case study is needed to understand the phenomenon more clearly and relate it to students at an HSI.

QUALITATIVE RESEARCH DESIGN

Case Study

One of the foundational methodologists in qualitative research is case studies. Merriam (1998) has said that "research is, after all, producing knowledge about the world – in our case, the world of educational practice" (p. 3). This research was aimed to understand how underprepared math students at UTEP overcame academic probation during the spring semesters

2016, 2017, and 2018. Because an in-depth understanding of the phenomenon was needed, a case study was used for this study.

Merriam defines a case study as "an intensive, holistic description and analysis of a bounded phenomenon (Yazan, 2015, p. 139). She further notes that case studies encompass distinctive attributes. These attributes are particularistic, meaning that the research was focused on a particular situation, event, program, or phenomenon; descriptive, referring to the rich, thick descriptions produced about the phenomenon being studied; and heuristic, referring to how a case study illuminates the readers understanding of the phenomenon under investigation (Yazan, 2015, p. 139).

Additionally, Creswell and Poth (2018) refer to a case study as a "qualitative approach in which the researcher explores a real-life, contemporary bounded system or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information" (Creswell & Poth, 2018, p. 96). For this study, a collective case study was used to answer the research questions. Multiple students were surveyed and interviewed to garner the differing choices and resources that impacted their ability to overcome academic probation.

Creswell and Poth (2018) note that when conducting a thorough and legitimate qualitative research case study, it is essential to identify what the researcher brings to the research and how their perceptions and experiences may influence the outcome (p. 17). They also suggest that it is important to identify the philosophical assumptions and interpretive frameworks, or research paradigms, that will underpin the qualitative research.

RESEARCHER PERCEPTIONS

Identifying what the researcher brings to the research and how their perceptions and experiences may influence the outcome is vital in embarking on case study research. It should be

noted that the researcher for this qualitative study has over 22 years of working in developmental education as an instructor and administrator. Furthermore, the researcher has worked at UTEP for 20 years – 12 of those as the Developmental Math Department director. The researcher has worked with the Texas Higher Education Coordinating Board in setting developmental math policy for the state and is the president of a national organization whose focus is on student success. Much of the researcher's opinions and views are based on the extensive work done with underprepared students.

Moreover, the interviewer's perceptions come from working at a four-year institution in a department solely focused on creating programs to help underprepared students succeed. The department employs full-time faculty and staff and has an annual budget sufficient to offer programs outside of the traditional semester courses. More importantly, the researcher has been creative and innovative in programming, with full support from upper leadership. As such, the researcher's experience in developmental education and the direct work with Hispanic underprepared developmental math students means that perceptions of what works for students to help them get off academic probation will be underlying the entire research process.

PHILOSOPHICAL ASSUMPTIONS AND INTERPRETIVE FRAMEWORKS

To conduct a qualitative case study, the philosophical assumptions or paradigms that drive the research must be understood because they provide a set of shared beliefs and agreements about how the problem was understood and addressed (Prabash, 2018). Paradigms are basic belief systems with assumptions about ontology, epistemology, methodology, and methods (Abdul Rehman & Alharthi, 2016, p. 51).

These beliefs are brought to the investigator's research and are referred to as worldviews (Creswell & Poth, 2018; Guba, 1990; Prabash, 2018). Grix (2004) posits that for people to

conduct detailed, precise research and evaluate other's research, people must understand the philosophical underpinnings that inform their choice of research questions, methodology, methods, and intentions (p. 57). Consequently, how one views the concepts of social reality and knowledge affects how one will discover information about the relationships between phenomena and social behavior (Mack, 2010). Therefore, as a researcher, knowing and articulating beliefs about the nature of reality, identifying what can be learned about it, and determining how to gain knowledge is imperative.

Ontology and Epistemology

Ontology and epistemology must first be defined before discussing the underpinning philosophy of this research. Grix (2004) believed that "ontology and epistemology are to research what "footings' are to a house: they form the foundations of the whole edifice" (p. 59). Ontology is the "study of being" or "what is" (Crotty, 2003, p. 10). It is concerned with the nature of reality or existence of a particular phenomenon or "what is there?" (Abdul Rehman & Alharthi, 2016; Ahmed, 2008; Creswell & Poth, 2018; Crotty, 2003; Grix, 2004; Prabash 2018). Epistemology, on the other hand, is how one acquires that knowledge. It is "a way of understanding and explaining how we know what we know" (Crotty, 2003, p. 3). It is concerned with "what do you know?" and "how do you know it?"

Ontology and epistemology work in conjunction to help the researcher understand the reality of the situation being researched and convey how it was understood. For this research, the reality is that students come to UTEP underprepared in math and are required to take a remedial math course. Some of those students wind up with a GPA below 2.0 at the end of their first semester and are placed on academic probation. Moreover, some students who enroll in a developmental math course during their spring semester can clear academic probation by

bringing their GPA equal to or above 2.0. This research is focused on that student population with the belief that the students who will be studied will have their thoughts, interpretations, and meanings of being placed on academic probation and have different ways of exiting academic probation.

The epistemological stance for this research is one of constructivism because students constructed knowledge for themselves as they progressed through their courses to find meaning and understanding of how they improved their GPA. Constructivism is a learning or meaning-making theory that explains the nature of knowledge and how human beings learn by arguing that people gain knowledge and meaning from interactions between their experiences and ideas (Ahmed, 2008; Mogashoa, 2014). Constructivism aims to understand the world in which one lives and works and to rely as much as possible on the participants' views of the situation (Creswell & Poth, 2018, p. 24). Thus, the research focused on filtering differences and finding commonalities among students interviewed regarding the meaning that each student placed on academic probation and finding a way to exit it.

Interpretivism

Because the ontology for this research is based on the multiple meanings and interpretations of students, and the epistemological stance is constructionist in nature, the underpinning theoretical perspective of this research study is interpretivism. Lincoln et al. (2011) posit that interpretivism rejects the notion that a "single, verifiable reality exists independent of our senses" and that "interpretive ontology refuses to adopt any permanent, unvarying standards by which truth can be known" (p. 204). Interpretivists believe in socially constructed multiple realities, and that truth and reality are created, not discovered (Abdul Rehman & Alharthi, 2016, p. 55). The researcher's role is to understand, clarify, and interpret social reality through the eyes

of different students (Cohen et al., 2007, p. 19). Moreover, researchers are inseparably a part of the social reality being researched because of the beliefs and assumptions that they carry with them. Interpretivism acknowledges that different researchers bring different perspectives to the same issues. The objective of interpretive research is not to discover one single truth but to understand the individuals' interpretations about the social phenomena they interact with (Abdul Rehman & Alharthi, 2016, p. 55). In this case study, the goal is to understand the interpretations of underprepared math students at an HSI who excited academic probation.

POPULATION AND SAMPLING INFORMATION

Determining who to study and how to study and when and where to study those who are connected to a phenomenon is a critical aspect of qualitative research. The answer to these questions substantially impacts the outcome of the study. Therefore, the researcher must ensure that the right population is studied, and that fair and equitable processes are put in place for the study.

Selection Criteria

Qualitative research is based on interactions with participants. Finding potential participants who have experience with the phenomenon and are willing to share their thoughts is crucial. Additionally, a researcher must be able to access their participants and be sure that the participants in the study have experience with the phenomenon (Lani, 2019). The researcher must have a clear description of who fits the study. Thus, the first step in determining the selection criteria is to identify an ideal participant's characteristics. Attila Marton (2013), in his working paper "Purposive Selection and Evaluation Criteria for Qualitative Research," provided guidelines for selecting participants for a qualitative study and stated that the selection strategy should:

- stem logically from the conceptual framework, as well as from the research questions being addressed by the study,
- generate a thorough database on the type of phenomena under study,
- allow the possibility of drawing clear inferences from the data and credible explanations,
- must be ethical and feasible, and
- allow the researcher to generalize the conclusions of the study to other settings or populations (p. 16).

Using these guidelines, it was agreed that the participant selection strategy to be used was purposeful sampling. Purposeful sampling is a "technique widely used in qualitative research to identify and select information-rich cases for the most effective use of limited resources" (Palinkas et al., 2013, p. 534). The primary goal of purposeful sampling is to concentrate on the characteristics of the population of interest that will allow the research questions to be addressed (LAERD, 2012, para. 3). In this case, it is finding underprepared math students who have experienced the phenomenon of being placed on academic probation and clearing it by raising their GPA to be equal to or above 2.0. Likewise, Creswell and Poth (2018) define purposeful sampling as one that intentionally samples a group of people who can "best inform the researcher about the research problem under examination" (Creswell & Poth, 2018, p. 148). Utilizing the descriptions of Marton, Creswell, and Poth, and Palinkas et al. for purposeful sampling, this research was narrowed to include a purposeful sampling strategy of criterion-i sampling. Palinkas et al. pose that the objective of criterion-i sampling is "to identify and select all cases that meet some pre-determined criterion of importance" (Palinkas et al., 2013, p. 535). In this case, all students selected for interviews were able to get off academic probation and were assumed to have "knowledge of the phenomenon of interest

by virtue of their experience, making them information-rich cases" (Palinkas et al., 2013, p. 539).

Population

The population of the study was defined as:

- Students classified as underprepared for college-level math by having a math Texas Success Initiative Assessment (TSIA) placement score of 336–349. The TSIA is a state-mandated placement test whereby students are placed into math courses according to their skill-level and content knowledge in math.
- Students who were enrolled in developmental math, specifically Intermediate Algebra, during spring 2016, 2017, or 2018.
- Students who subsequently cleared academic probation and were deemed eligible to enroll and had a GPA of greater than 2.0 the following fall.
- Students who were still enrolled at UTEP as of fall 2019.

Students to be excluded are those who (1) placed college-level or pre-developmental (Adult Basic Education) level on the math TSIA, (2) had a GPA greater than 2.0, (3) did not get off of academic probation the following fall and/or (4) were not enrolled at UTEP during the 2019 fall semester.

This student population was chosen because (1) data would be easily collected as it already existed, (2) students were more likely to be on academic probation during the spring semester rather than the fall semester, and (3) the student population was limited to underprepared developmental math students who were on academic probation.

Many studies have been conducted regarding what causes students to be placed on academic probation. Still, there is limited research delving into the reasons why and how students get off of academic probation. This study will contribute additional information about academic probation, particularly on how underprepared students overcame academic probation.

This research can help those who work with students who are underprepared or struggling academically.

DATA COLLECTION METHODS

Initial data were collected from the University of Texas at El Paso's institutional research office, the Center for Institutional Evaluation, Research, and Planning (CIERP), to identify and gather information on students enrolled in developmental math during the Spring 2016, 2017, and 2018 semesters.

Data Collected

Demographics: Name, identification number, age, race/ethnicity, gender, and first-generation status.

Contact Information: email, address, and phone number.

Academics:

- The number of semester credit hours attempted.
- The number of semester credit hours completed.
- GPA and academic status during the following fall 2016, 2017, 2018 semesters.
- Grade in Intermediate Algebra during spring 2016, 2017, 2018 semesters.
- Grade and term of first college-level math course.
- Testing: High School GPA and Texas Success Initiative Assessment (TSIA) score.

Upon getting the data from CIERP, a survey was sent to all students enrolled in Intermediate Algebra during spring 2016, 2017, and 2018 via their UTEP email. The survey was sent to all students to ensure no bias was shown towards students on academic probation. The student survey was open for two weeks and included a question regarding informed consent. The survey was designed to obtain general information from students, as well as solicit students who

agree to be interviewed. Students who chose to participate were contacted by both email and phone to set up interviews. There was no gatekeeper, as the researcher was responsible for all communications with the students.

According to Brinkmann and Kvale (2007), an interview is "where knowledge is constructed in the interaction between interviewer and interviewee" (p.4). Furthermore, Kvale states that "the virtue of qualitative interviews is their openness" (Kvale, 2007, p. 2). As such, the purpose of the interviews in this study was to gain an in-depth and thorough understanding of the experiences that helped students overcome academic probation. The questions' emphasis surrounded (1) what strategies helped in exiting academic probation and (2) if a sense of belonging played a part in overcoming academic probation. Four students were interviewed, and each interview lasted approximately 40 minutes. The interview questions, included in Appendix D of the study, are precise, open-ended, and articulated to reduce potential or perceived harm.

Data Storage

The data collected was derived electronically via system reports, email, and voice recordings. All data was stored in a password-protected computer file. All written documents, such as transcripts, were stored in a locked and secure file cabinet with access limited to the researcher. Additionally, all written data was destroyed once it was transcribed and sent for review to the participants. Confidentiality was always maintained. Personal information was removed, and pseudonyms were used for each participant.

DATA ANALYSIS

It has been shown that "qualitative data analysis is a complex and challenging part of the research process" (Dierckx de Casterlé et al., 2012, p. 360). Furthermore, "qualitative research seeks to convey the *why* people have thoughts and feelings that might affect the way they

behave" (Sutton & Austin, 2015, p. 227). It is the researcher's job to access those thoughts and feelings and to develop an understanding of the meaning people attribute to their experiences (Sutton & Austin, 2015, p. 226). In other words, researchers must put themselves in another's position to see the world from their point of view, then convey that information to others.

Data analysis is the process by which researchers analyze transcripts, field notes, records, video, and audio recordings, and images to interpret them into meaningful concepts. Malterud (2001) has described data analysis as involving "*decontextualization* and *recontextualization*" (Malterud, 2001, p. 486). In essence, the researcher breaks the data into smaller parts, studies it, and rearranges it to answer the research question. Thus, decontextualization is breaking down the data; recontextualization is building it back up.

Because qualitative data analysis is complicated, researchers often search for guidelines to navigate their way through a large amount of data collected during the research process. There is no right way to analyze qualitative data, and Froggatt, in *The Analysis of Qualitative Data: Processes and Pitfalls,* has stated that qualitative data analysis is a process best "learned by doing" (Froggatt, 2001). Furthermore, Dierckx de Casterlé et al. have shown that meaning does not just happen; "it is the researcher that makes it so" (Dierckx de et al., 2012, p. 361).

Data analysis is unique to each researcher and cannot be copied; it must be "built, revised, and choreographed" (Creswell & Poth, 2018, p. 185). To help researchers understand the process of analyzing data, Creswell and Poth created the *Data Analysis Spiral*. This spiral is where the "researcher engages in the process of moving in analytic circles rather than using a fixed linear approach" (Creswell & Poth, 2018, p. 185). For this research, the Data Analysis Spiral was used to analyze the data collected by CIERP on student demographics and academics,

surveys completed by students, and interviews conducted by the researcher with students who fit the characteristics profile. Table 2 below describes the process in detail. (p. 187).

Table 2: Data Analysis Spiral

DATA ANALYSIS SPIRAL		
STEPS	DATA ANALYSIS SPIRAL	ANALYTIC STRATEGIES
1	Managing and organizing data.	Preparing files and units. Ensuring ongoing security of files. Selecting a mode of analysis.
2	Reading and memoing emerging ideas.	Taking notes while reading. Sketching reflective thinking. Summarizing field notes.
3	Describing and classifying codes into themes.	Working with words. Identifying codes. Applying codes. Reducing codes to themes.
4	Developing and assessing interpretations.	Relating categories, themes, and families to contextualize understandings and diagrams. Relating categories, themes, and families to an analytic framework in literature.
5	Representing and visualizing the data.	Creating a point of view. Displaying and reporting the data.

(Creswell & Poth, 2018, p. 187)

All responses were transcribed verbatim and were used for memoing and classifying codes into themes. The themes were then coded into a classification system used to interpret the data (Ritchie & Spencer, 2002). IRB protocols were followed at both Ferris State University and UTEP. Because the students being studied were enrolled at UTEP, the UTEP IRB process was used first. Of utmost concern for the UTEP IRB was ensuring that no data was collected before the survey that could lead to a premature conclusion of enrollment status or the identification of whether a student was on academic probation. As such, all data collection requests relating to GPA were removed. Student self-identification was the only method used for determining who was on academic probation. Secondly, because the researcher works at UTEP and has access to the systems that provide GPA data, careful attention was paid to data collection details. Once all

approvals were obtained at UTEP, the IRB documents were sent to the Ferris State University IRB for approval. Both IRB processes were followed to ensure that the study was conducted professionally and ethically.

ETHICAL CONSIDERATIONS

Ethics is a system of moral principles, and ethical considerations are the "norms or standards for conduct that distinguish between right and wrong. They help to determine the difference between acceptable and unacceptable behaviors on the part of the researcher" (Center for Innovation in Research and Teaching, n.d.). The integrity, trustworthiness, and legitimacy of research results rely on adherence to ethical principles. Readers want to be assured that the researcher researched ethically. Thus, ethical issues must be at the forefront of any researcher's mind and must be addressed in each step of the process. Creswell and Poth (2018) have stated that ethical issues in qualitative research can occur in any part of the study (p. 54) and that ethical considerations are more involved than merely obtaining permission from an institutional review board (p. 48). Proper procedures must be in place to adhere to an ethical standard from the moment researching starts through the analysis and publication of the data and results. Creswell and Poth posit that ethical considerations should simply focus around three broad categories, (1) respect for persons, (2) concern for welfare, and (3) justice (Criswell & Poth, 2018, p. 54).

Respect for persons encompasses the treatment of people and handling of the data gathered during the research process, including the participant's right to withdraw from the study (Creswell & Poth, 2018, p. 54). Participants in this study were informed about the research details, were asked for an informed consent form, and were assured of complete anonymity. They were also informed of the right to withdraw from the study at any time.

Concern for welfare means that each researcher must ensure participants are not harmed during the research process (Creswell & Poth, 2018, p. 54). The researcher must minimize the risks physically, psychologically, and socially to all participants. In this study, a primary concern was regarding the feelings and thoughts students had about being placed on academic probation. In some instances, students can feel disheartened and ashamed about the status of their poor academics. Moreover, many students who perform poorly have lower motivation levels and find it difficult to talk about academic probation. As such, great care was taken to interview only students willing to speak to their being placed on academic probation. This was achieved by getting consent via the survey sent to students. Only those students who wished to participate further were contacted for an interview.

Additionally, the students being interviewed in this study were classified as underprepared for college. Many students in this situation lack confidence in their ability to be successful college students. To ensure that students did not feel discriminated against, being underprepared was not brought up during the interview process. The questions focused on academic probation.

Lastly, concern existed around violating the Family Educational Rights and Privacy Act (FERPA), which protects the privacy of student educational records. Care had to be taken when gathering student data to protect their personal information, such as academic status. In this case, it meant that GPA data nor enrollment eligibility status was not requested for the terms in which students were on academic probation. This information was gathered from students who self-selected to answer the question via a survey.

Justice refers to the need to treat people fairly and equitably (Creswell & Poth, 2018, p. 54). Researchers must carefully consider the participant's vulnerability as well as their

contribution to the study. In this case, because students were characterized as underprepared and as having been on academic probation, it was critical that students were handled with care. Specifically, during the data gathering process, the researcher did not single out only those students who were underprepared for college-level math and were on academic probation. Doing that would have been inequitable and showed a bias towards students. To address any possible discrimination, all students enrolled in Intermediate Algebra during the Spring 2016, 2017, and 2018 semesters received the survey so that those who were on academic probation were not "singled out" or felt "targeted." Students who fit the participant profile identified themselves as being on academic probation and chose to participate in the interview process. By approaching the data gathering in this way, all students were treated fairly and equitably.

Trustworthiness

No research is considered valid or trustworthy if processes are not in place to make it so. Because qualitative research focuses on human beings and why a phenomenon occurs as the basis for their study, rigor, quality, and trustworthiness are important aspects. Trustworthiness is needed because it impacts the degree of confidence readers have in the results. As defined by Cypress (2017), trustworthiness refers to the quality, authenticity, and truthfulness of findings of qualitative research (p. 254). Guba and Lincoln stated that "all research must have 'truth value,' 'applicability,' consistency,' and 'neutrality' to be considered worthwhile" (Amankwaa, 2016, p. 121).

In addition, trustworthiness can be described as a measure to evaluate the quality of research design. Guba and Lincoln posed that trustworthiness is a goal of a study and something to be assessed after the research is completed. They further state that trustworthiness evolved because of concerns, such as trust in the results, applicability to other people, consistency among

the findings, and neutrality of the researcher (Cypress, 2017, p. 255). Guba and Lincoln created a set of criteria for researchers to follow, which were used as checklists to conduct high-quality research and as indicators of worthiness. The requirements of trustworthiness are (1) credibility, (2) transferability, (3) dependability, and (4) confirmability (Amankwaa, 2016, p. 122; Cohen & Crabtree, 2006; Cypress, 2017; Lincoln & Guba, 1985; Morse, 2015, p. 1212).

These criteria help researchers monitor themselves to ensure that the research meets the standards of quality and rigor (Cypress, 2017, p. 255). It should be noted that trustworthiness is used as the central concept in Lincoln and Guba's framework to appraise a qualitative study's rigor. Lincoln and Guba have stated that trustworthiness and rigor are synonymous. It is particularly challenging to ensure that qualitative research is rigorous because of the complex process involving discovering what human beings believe.

Morse et al. (2002) state that qualitative research without rigor is useless. Thomas and Magilvy (2011) have defined rigor as "ways to establish trust or confidence in the findings or results of a research study" (p.151). They further suggest that rigor is needed to ensure consistency of study methods over the length of the study and that the population studied is represented accurately.

To maintain this research study's rigor and trustworthiness, the researcher utilized Lincoln and Guba's criterion for evaluating trustworthiness.

Credibility

Credibility is defined as "confidence in the 'truth' of the finding" (Amankwaa, 2016, p. 121). Credibility is achieved when a researcher depicts the accurate and truthful picture of a participants' lived experience– in other words, to convey the phenomenon from the participants' eyes. Credibility can be achieved by implementing the strategies of (1) prolonged engagement,

(2) persistent observation, (3) triangulation, (4) peer debriefing, (5) negative case analysis, (6) referential adequacy, and (7) member-checking support credibility (Amankwaa, 2016, p. 122).

Not all these strategies can or should be used in every research study. For example, this case study could not have prolonged engagement and persistent observation with participants because they have already successfully cleared academic probation. There was no way to study them during the semester they were on academic probation because the interview process occurred after the participants got off academic probation. The study also did not use referential adequacy because the number of students who studied was small. Referential adequacy involves setting aside a portion of the data to be archived but not analyzed. The researcher conducts data analysis on the remaining data to ultimately compare with the archived data. In this case study, there was not enough data to set some of it aside for validation purposes. However, to ensure this case study was credible, the researcher used four of Lincoln and Guba's (1985) criteria. The criteria used were:

- **Persistent observation:** Using student interviews, events, or activities that had the most impact in helping students exit academic probation was to be identified.
- **Peer debriefing:** For this study, the dissertation chair and committee reviewed and gave feedback on all interpretations and analyses.
- **Member-checking:** Member-checking entails sharing the findings with those who participated in the research to check for accuracy. Four students who fit the study criteria were interviewed; membership-checking was be used to ensure that the data and its interpretation were captured accurately. Each participant was sent the transcripts for verification, and participants were provided an opportunity to give feedback upon completion of the data analysis chapter.

Transferability

Transferability refers to the degree to which the qualitative study results can be generalized to other contexts or settings (Harvey, 2019). To ensure that these research results were transferable, thick descriptions were used to describe the participants and their stories of

how they cleared academic probation. Thick definitions refer to the detailed account of field experiences in which the researcher makes explicit the patterns of cultural and social relationships and puts them in context (Cohen & Crabtree, 2006; Holloway, 1997).

Dependability

To ensure that this research was dependable, an internal audit was conducted. The dissertation chair and researcher identified the best way to perform the audit. The goal of the audit was to ensure that the findings, interpretations, and conclusions were supported by the data collected.

Confirmability

Confirmability was an essential part of this research process because the researcher has over 20 years of experience working with underprepared students on academic probation and has distinct opinions on what helps students exit academic. These biases were noted and addressed in the research. For this case study, the researcher used the following processes to ensure confirmability: (1) conducted an internal audit, (2) created and followed a detailed audit trail, and (3) reflexivity. The internal audit trail included collecting and analyzing data and writing summaries; the development of themes, definitions, and relationships using coding methods was used for the data; and the documentation of procedures, designs, strategies, and rationale for the research. A journal was kept that noted the environment, the emotions of the researcher, and the thoughts that the researcher had during the data collection process. Lastly, reflexivity refers to examining one's own beliefs, judgments, and practices and how they impacted the research. It involves "questioning one's taken-for-granted assumptions" (Hammond, 2017). To ensure the study's trustworthiness and confirmability, the researcher's preconceived assumptions were

recorded by journaling regarding underprepared students, students on academic probation, and strategies that can be used to clear academic probation.

LIMITATIONS

This study's limitations center around the following areas: selection bias, small sample size, generalizability, and the truthfulness of participants. Due to the population selected, the study was difficult to generalize. Students were identified as being underprepared in math, on academic probation, and were enrolled at a four-year university in which 80% of the students are Hispanic. This creates a unique situation because most underprepared students enroll in a community college rather than universities. The National Center for Educational Statistics (2016) stated that 32.6% of the entering students during the academic years 2003 to 2009 enrolled in a remedial math course at a four-year institution versus 59.3% of students at a community college (p. 15). In other words, more underprepared students enroll at a community college than at a four-year institution. Because community colleges operate differently from four-year institutions, it will be difficult to generalize this study's findings to students at those institutions.

The researcher surveyed all students enrolled in developmental math during the Spring 2016, 2017, and 2018 semesters. However, only four students agreed to be interviewed, making it difficult to generalize because so few students were interviewed. The limited number of students interviewed could affect the survey results' reliability because it could lead to higher variability, leading to bias. Furthermore, if the sample size is small, the study's power could be reduced, and the margin of error could be increased, rendering the study meaningless. To counteract this limitation, the researcher used purposive sampling and in-depth interviews to garner relevant information.

UTEP is an open-access institution, and most students who apply are accepted. It will be difficult to generalize this study's findings to other universities where admission policies are stricter. There are only 523 institutions in the U.S. classified as a Hispanic Serving Institute (HACU, 2017). To put this in perspective, there are 5,430 private and public institutions of higher education in the U.S., with 4,298 of them classified as four-year institutions (AACC, 2019; NCES, 2017). Thus, only 9% of institutions are classified as HSI. Because so few institutions are classified as HSI, it will be difficult to generalize this study to other institutions because of the differing characteristics. However, as the largest growing demographic, Hispanics and their specific needs should be addressed by higher education. So, while the results may not be generalizable, it may be that the information from this study could prove helpful to those who work with Hispanic students, even if not at an HSI.

Lastly, a limitation that must be considered is whether the participants were truthful or not. It was assumed that all participants related their stories truthfully. However, it was impossible to check this because the participants were speaking about their past experiences.

SUMMARY

The purpose of this case study is to discover how underprepared developmental math students who were on academic probation at a four-year Hispanic Serving Institution succeed in clearing academic probation. Using a qualitative approach, specifically a collective case study, and listening to students' unique stories, information can be garnered about what works. This information can be shared with others who work with underprepared developmental math students who are on academic probation. This study on academic probation students contributes to the body of knowledge regarding strategies that help underprepared developmental math students' clear academic probation.

CHAPTER FOUR: RESULTS, FINDINGS, AND ANALYSIS

INTRODUCTION

Qualitative research allows the researcher to gain an understanding of why a phenomenon occurs (Course Hero, 2021). Creswell and Poth (2018) pose that qualitative research "includes the voices of the participants, the reflexivity of the researcher, a complex description and interpretation of the problem, and its contribution to the literature for a call for change" (p. 8). Chapter four presents the results of the data analysis that were used to describe the sample population and answer each of the research questions posed for this case study. All case study research starts from the same place: the need to derive an up-close and in-depth understanding of a small number of cases set in their real-world situations (Yin, 2011, p. 4). Thus, case study research "assumes that examining the context and other complex conditions related to the case(s) being studied are integral to understanding the case(s)" (Yin, 2011, p. 4). The purpose of this case study was to learn how underprepared math students who were on academic probation at a four-year Hispanic Serving Institution (HSI) succeeded in getting off academic probation.

RESEARCH QUESTIONS

1. What strategies contributed to a developmental math student's ability to exit academic probation at a Hispanic Serving Institution?
2. Does a sense of belonging impact a developmental math student's ability to exit academic probation?

This chapter highlights the case study method's value by providing a review of the research questions and analyzing the data gathered through informational background surveys

and one-on-one interviews. Included in this chapter are (1) a description of the research data collection and analysis process, (2) descriptive data of participants, (3) description of emerging themes, (4) an analysis of the themes, and (5) answers to the research questions.

DATA COLLECTION PROCESS

To identify participants for the study, the researcher sent a survey to all students enrolled in developmental math, specifically Intermediate Algebra, during the 2016, 2017, and 2018 spring semesters at the University of Texas at El Paso (UTEP). A survey was sent to 673 students, of whom 138 (20.5%) students viewed the survey, 52 (7.73%) students started the survey, and 44 (6.54%) students responded to the survey. Six students agreed to participate in the interview process, but only four students responded to an interview request. Students were interviewed via FaceTime between April 25, 2020, and May 1, 2020, and with permission from each participant, an audio recorder was used to record each interview. FaceTime was used as the interviewing mechanism because of the COVID-19 pandemic and the inability to hold in-person interviews. Upon completing the interviews, the data were sent to a professional transcribing service to transcribe the data.

In analyzing the data, the researcher followed a data analysis spiral to ensure data were analyzed in a manner that upheld credibility and trustworthiness. First, all data files were encrypted and stored on a personal computer. Secondly, member-checking was used. Each participant was sent a copy of their transcription to confirm a true and accurate reflection of what they had said during the interview was captured. In this case, the researcher sent multiple email and text requests to participants to gather their feedback. To date, participants have responded. As such, the researcher moved forward with analyzing data and sent all transcripts to the committee chair for review.

Once analysis began, the researcher used the following memoing processes. The researcher:

1. Read the transcripts.
2. Re-read and highlighted the transcriptions.
3. Listened to each recording.
4. Re-read the transcriptions and started a notebook for notes to capture critical concepts.
5. Re-read the transcripts to identify and journal
    a. quotes for possible use,
    b. characteristics of each participant,
    c. what motivated students to succeed,
    d. strategies used to get off academic probation,
    e. critical support systems of the participant,
    f. what lessons were learned by the participants,
    g. what advice the participant would give to other students,
    h. who helped the participant feel as if they belonged,
    i. how the participant felt being placed on academic probation, and
    j. what students would have like have known before being placed on academic probation.
6. Classified and color-coded keywords, phrases, and sentences that demonstrate belonging and motivation.
7. Identified major themes.
8. Discussed results, emerging themes, and analysis procedures with dissertation chair.
9. Answered research questions.

DESCRIPTIVE DATA OF PARTICIPANTS

Pre-interview demographic data were collected on participants to gain general information about the students' educational information, employment information, and family history, including income and educational background. Participants included two male and two female students, and they are identified by pseudonyms to ensure confidentiality. Table 3 represents the demographic data of the four participants. Table 4 describes the participant's family background and demographics.

Table 3: Student Demographics

NAME	GENDER	AGE	RACE/ ETHNICITY	MAJOR	CLASS YEAR	NUMBER OF HOURS WORK
Lucia	Female	21	Hispanic / Black	Biology	Junior	21-25
Julian	Male	23	Hispanic	Business	Senior	36-40
Isabel	Female	26	Hispanic	Health Promotion	Junior	36-40
Mateo	Male	23	Hispanic	History	Senior	16-20

Table 4: Family Demographics

NAME	FAMILY INCOME	RECEIVE FEDERAL FINANCIAL AID	FATHER'S HIGHEST EDUCATIONAL LEVEL	MOTHER'S HIGHEST EDUCATIONAL LEVEL	PRIMARY LANGUAGE SPOKEN AT HOME
Lucia	$101,000 – $125,000	Yes	College Degree	College Degree	Spanish
Julian	$101,000 – $125,000	Yes	Some College	Some College	Spanish
Isabel	$101,000 – $125,000	Yes	Some College	Some College	English
Mateo	$26,000 – $50,000	No	Less than High School	Less than High School	English

STUDENT PROFILES

Lucia

Lucia is a 21-year-old female who wound up on academic probation after her first semester at UTEP. In her second semester, when she did not pull up her grades enough, she was placed on academic suspension. She transferred to the community college to get her grades up and transferred back to UTEP, where she found success and is in her last semester of school. Lucia received Federal Financial Aid for school but worked as a bartender to help her pay for expenses. Through her job, she had witnessed older adults still bartending and struggling to make ends meet. Lucia stated that "I don't want that for myself – to be struggling and not know where I am going to turn or not have a backup plan basically."

Education is very important in her family, and many of her relatives are teachers. Her dad was in school simultaneously and was set to graduate from college the semester before her. She had seen her family struggle for many years because of his inability to find professional work. She stated that:

> He was barely graduated college, the university college. There's nothing wrong with that. But the fact that I've seen how my dad was struggling before going to college, how it would be really hard for him to find a job and help us out, how it would push back my mom, and things that she had to get for us. I decided I didn't want that if I have a family in the future.

When Lucia was asked how it felt to fail a course, she stated that she felt like she "couldn't do it, that it was going to be the outcome for the rest of my semester, the rest of my college career." She felt discouraged and unsure if she wanted to go back to college.

Lucia had a difficult transition to college because the college environment was different from what she experienced in high school. She stated that her high school was lenient, and if she missed assignments, she could make them up. Even at the three-week mark, if she had not turned in an assignment, the teacher would let her make up the work. Once in college, she was "shocked

to find out that teachers don't really care sometimes, and that if you don't finish it, too bad. No extensions." It was an adjustment for her and one that caused her to get behind in her work the first semester in college. She stated that she was "surprised the classes were harder."

Once Lucia found out she was on academic probation, she felt really discouraged, particularly about telling her family. She had to let them know that she would not get Federal Financial Aid until she brought up her GPA. More importantly, she had to tell them that she could not enroll at UTEP because she was suspended. They were disappointed in her, which made Lucia feel even more discouraged.

Moreover, Lucia did not understand the consequences of failing a course. She stated that "I didn't know what would happen after – I was really surprised by what came after that." Furthermore, Lucia noted that she did not understand what academic probation meant. She received an email saying she was on academic probation, and her advisor went over what she had to do to get off academic probation. She stated:

> I wasn't really sure about what academic probation was until I started understanding what I needed to do. Once I saw the consequences of academic probation, it was stressful. A lot of things I had to do to push back to pay for school for myself, because I wasn't able to get Federal Financial Aid.

Lucia made a conscious choice to earn her way back into UTEP. She said she would talk to herself and say:

> It's either you want to work at a bar for the rest of your life, or you want to make a career out of yourself, and you want people to look up to you. It was a big impact on myself to be like, okay, get serious now. This is real. This is going to really affect your future.

Lucia enrolled in the community college and continued to register there until her grades were up and she could transfer back to UTEP, which was within a year. Lucia stated that she enrolled at the community college because she wanted to come back to UTEP. She wanted an authentic college experience, and the only way she could accomplish that was by enrolling at the

community college to get her grades up so she could return to UTEP. However, Lucia struggled at the community college. The environment was completely different, and Lucia stated that she felt like something was missing. At the community college, she had no friends and felt isolated. She would attend classes, work, and go home. She wanted to go back to UTEP so that she could experience what college should be like. One of the reasons Lucia wanted to come back to UTEP was "because a lot of people are moving…we're all wanting to succeed, we all have a goal, and that's to be better than we were." Lucia was driven by her life experiences to make a future for herself. To reach her dreams, she had to do everything possible to get back into UTEP to earn her bachelor's degree. For Lucia, that meant attending the community college for a couple of semesters.

To be successful, Lucia stated that she "did a lot more than what I was doing, my bare minimum, what I was doing, and I really wanted to pass." Now she puts in a lot more effort. She talks to professors, completes extra credit assignments, goes to the professor's office hours. Lucia said:

> Just the fact that I go in and I actually pay attention to the book, I read more. Even if I'm tired, I go to class. It does not matter how I feel; I go to class. I always sit right in the front. I listen a lot more than what I used to do. I feel like I am learning a lot more than just listening to a lecture; I'm really understanding.

Lucia mentioned one class, in particular, that was hard – even though she was "studying day and night." She started working with the professor by going to his office hours, attending his study sessions, and doing any extra credit he provided. He showed her how to be a successful student. He saw the effort she was putting in and worked with her to get a good grade in the class.

Additionally, Lucia learned to pay close attention to the courses she took, particularly the time. As a bartender, she is up late. When she first got into college, she would enroll in 7:30

classes. She did not pass them. She learned that she should never take a 7:30 am class because it was unrealistic due to her job.

Moreover, Lucia indicated that working with her advisor was critical to her getting off academic probation and staying in good academic standing. She would frequently meet with her advisor, stating that she spoke with him about five times per month. She relied on him for advice and took every problem she encountered to him; together, they would discuss her options. Lucia said, my advisor "was my main person. Just because I keep going back to him, just because he is the main person that I've had; a permanent person…not permanent, but the same person that I've been able to go back to for the last four years."

When asked what information she would have like have known before being placed on academic probation, Lucia stated:

> I would have like to have known about the situation of academic probation, period. I would have like to have been told about that, to be warned about something like that, just because I'm pretty sure I would've been a little bit more careful and not just whatever about everything. I didn't really understand the severity of the situation.

Lucia said that she would not change anything about being on academic probation because she could go to the community college. The fact that she kept going helped her. Being able to change her way of thinking that college was just the same as high school. She stated that "I think that was a positive experience for me that something like that happened, and I was able to transition to a college mindset and into a lifestyle mindset."

When it comes to strategies, Lucia recommends for students to use all the resources that UTEP provides, including tutoring and resource centers, use the services offered in the library, talk to their professors, ask questions when they do not understand, attend class, read assignments, but most importantly, communicate with people in classes. Lucia said that it is important to "at least have somebody to talk to and message late at night. You're not getting a

problem. Ask them if they understand." In asking her what advice she would give to other students, she said the following:

> Definitely not to give up. It's going to be fine. Just keep going to class. That going to school is going to help you better your future. I would say, don't say that you're going to quit. Don't choose the option that you don't want to go back because you're going to be pushed back for a few more years, and it'll help you out in the long run.

Julian

Julian is a 23-year-old male who started college the summer after he graduated from high school. He started playing for the UTEP football team but quickly found out that having good grades was essential for the coaches because of the National College Athletics Association, NCAA requirements. Julian was kicked off the football team for failing his courses after only three weeks of participating. Julian had a difficult time transitioning to college, in part because he started in the summer right after he graduated from high school. Julian moved into the dorm, and he stated that the change was hard. He stated:

> Moving out of your parents' house – it's just overstimulating with just everything, social life, trying to get your academics right. I was also trying to play football, so a lot was riding on just academics.

Julian stated that he was a little intimidated by the school because of the different college and high school standards. In high school, he could redo assignments or get extra time for assignments to pass his classes. In college, he felt intimidated by the college environment.

Julian now works full-time as an accountant assistant to pay for school and is about six hours short of graduating. While he has only been on academic probation once, he has failed other courses and struggles to understand why GPA holds such importance. He stated:

> It was very rare that I applied what I learned in school to real life. I've never really viewed grades in class as being successful. But if I get a D or an F, it has a more negative effect because it prohibits me from fulfilling certain dreams.

His father was in the military, so Julian used military benefits to cover school costs until he lost his Federal Financial Aid due to his academic status. While he has it back now, it was a struggle to regain his military benefits because neither Julian nor his parents understood the Federal Financial Aid process.

When Julian was asked how he felt about failing a class, and if he understood what the consequences were of failing a class, Julian stated:

> No, I didn't. I really wasn't educated on the whole system of college and the academic… What is it called? Consequences of early academic mistakes, you know? And those academic mistakes that were early still cost me a lot of opportunities later. So again, I really didn't know, and it's kind of life, right? You're taking both the punches; if you're not educated about the future, then you just handle them as they come. So, yeah, I didn't know.

Those academic mistakes came early in his college career. Because Julian was trying out for the football team, he was required to start college in the summer. Thus, Julian's first taste of college was during the summer, which meant a faster timeline to complete the course. Classes were offered in four weeks rather than the full sixteen weeks, were more intense, and easier to get behind. Julian took two courses his first summer and failed both. He was aware of his situation and directly communicated with the professor and teacher's assistant in one course. He stated that "they were very accessible. I was able to have a clear, open line of communication with them." In this class, he knew what he had to do to pass, and it came down to the final exam, which he failed. Thus, he failed the course.

In the second course, Julian was surprised at how poor he was doing and eventually gave up. He thought, "Well, I'm not going to pass. You know what? I'm just not going to show up to class anymore. And so, I didn't, and I got an F." That summer, failing both of his courses, Julian wound up with a GPA of .6. This meant that he started his first full semester at UTEP on academic probation.

Julian was the first in his family to go to college, and the reality of going to college was hard. He and his family experienced a steep learning curve regarding Federal Financial Aid and how college works. He stated that "not understanding why… just the tips and trades of just being in college really kind of put me in the hole early." While Julian attended a new student orientation, it was only for one day, the Saturday before school started. Julian stated that it failed to give him enough information to do well in his classes. He did not get information on how to do well in college, where to get help if he was struggling, nor informed about the importance of his grades. Julian was unsure of what resources were available and where to turn to for help.

Once Julian wound up on academic probation, he described feeling isolated and punished. He stated that his academic advisor sat him down and laid out his situation; explained what he could and could not do. His academic advisor warned him that if he remained on academic probation, there would be serious repercussions. Julian stated:

> So, it was very, get your stuff together, or you're out of here. I know that more severe consequences are maybe you have to take a semester off, or a year off, or something like that, right? I just remember that experience being like, that's it? There's no help; there's no counseling? There's no, "Hey man; you can do it." There's nothing. It's just like, okay, this is what you did. This is how you get out of it, and if not, then that's it.

Moreover, he felt like his academic advisor turned into his academic probation officer, and he was being punished for his low grades. Julian believes that academic transcripts do not reflect who he is as a person or what he can do. Julian said, "a lot of school officials will have a bit of… not an attitude, but a stigma already towards you. You try to talk to them about goals and ambitions because once you get into your college, it's not just about academics. It's about okay, maybe grad school." He referenced that his friends have long-term goal conversations with their advisors, but when he brought it up, his advisor would say, "Well, yeah, maybe you could apply, but you're never going to pass the GPA requirement." It was as if being put on academic

probation prohibited him from having a future. He felt more anxious and isolated because he never got any word of encouragement from his advisor.

Julian also spoke about the stress of no longer having Federal Financial Aid due to being on academic probation. Julian is now about $16,000 in debt because he lost his military benefits. Julian's parents oversaw his military benefits, and they found out he lost his benefits about the same time that Julian found out he was on academic probation. Julian and his parents discussed the situation and came up with a plan. He said that his parents did not point the finger at him to say, "Dude, you just messed up royally" – they made him "aware of the situation and how life could have been good if I had all my apples lined up. But now that they're scattered, I have to work extra hard to get back there." They were not mad at him but did tell him that he was an adult, and he needed to figure it out.

Julian developed depression and anxiety. He described how all he had to do was go to school. That defined his success – was he doing well in school or not? He had always had ADHD but had never taken medication. So, when he started struggling with his academics, he decided he needed help. He saw a psychiatrist and a counselor and started taking medication. He described his feeling as "you know what, dude? I can't get past this point in school right now. I guess I can't focus or whatever the case may be." So, he decided to opt to take medication. He is still taking medication.

Julian decided to turn his educational and academic career around when he experienced rejection. First, he tried out for the UTEP football team and made it but was kicked off after three weeks due to his grades. Secondly, he wanted to join a fraternity but was turned down because he did not have a high enough GPA to meet their entrance requirements. Lastly, he applied for an internship and was denied because of his GPA. He stated:

> There are so many things that you get judged for about your GPA that has nothing [to do with] or can really measure your intellectual capacity or the way you can assess a situation or interpersonal skills. So, the experience, that denial, and that type of rejection, and so much of it at such a short time, really made me disgusted with myself that I just had to do it.

Success to Julian has never been about grades. As such, he found other outlets on campus to build his network and find his place at the university. Julian defines success as:

> Being the change that you always wanted. Whether that's within yourself, it could be interpersonal or just affect the people around you. And how I can relate that to schools is I've always been somebody that has always rooted for the underdog.

Julian struggled with success in the classroom and struggled to find his identity. Julian stated, "I struggled at first to identify what I could feel success in, and once I identified that, I just kind of gave it everything I had. I just went for it." So even being on academic probation did not stop him from trying to get involved on campus. Julian helped form the men's Rugby team at UTEP, became involved with the Student Engagement and Leadership Center (SELC) at UTEP, and once his grades were up, joined the Kappa Alpha Psi fraternity.

Julian has been mentored and influenced by those he socializes with, and he states that his Rugby coach is one of the people who helped him get back on track with his grades. He encouraged him to keep working and not to give up. More importantly, his rugby coach recognized that Julian was a leader and encouraged him to build the Rugby team.

Additionally, Julian has a couple of friends at UTEP who experienced a similar situation of being on academic probation who counseled him on navigating academic probation. They would counsel him on what courses to take and what steps to take to improve his grades. Julian's girlfriend was instrumental in guiding him through academic probation to become the successful student he is today. Julian stated that she would "literally tape me to my chair, and we studied." Without her, he would have had a difficult time getting off academic probation. She motivated him to put in the time required to learn the material and pass the classes.

When asked what information he would have like to have known before being placed on academic probation, Julian stated:

> Everything. I didn't even know there was academic probation. I didn't know that my advisor is the one that tells you you're on academic probation, and then he becomes like your academic probation officer, and then you have to go and check in with them or something. I think there's even a list you have to fulfill, and it's just like, why do I feel punished?

When asked about what strategies he would recommend others use to get off academic probation, he said that he believed that the institution should offer resources where students with similar characteristics could be connected, where a "buddy is assigned." For example, if a student has trouble crossing over the border, the institution would connect them to another student who struggles with the same thing. Julian said, "having one very clear beacon of light, that if you feel like you're about to go on academic probation if you feel like you're failing our classes, you just need to come here."

Furthermore, Julian said that UTEP could open a center where all they do is "help students get your stuff together. And maybe have a little case open about them" where they keep track of the difficulties they experience. The people working there show that they care about students, ask how they are doing, and follow up with past issues. More importantly, Julian said that the best piece of advice he would give to someone struggling is to "go find a purpose." He recommends that no matter who you are, it is important to "go find a student organization" somewhere you fit in and feel like you belong.

Isabel

Isabel is a 26-year-old female who has attended college off and on for many years. She is the first in her direct family to attend college. However, she has two siblings who started attending UTEP after her and were in college simultaneously – both of whom wound up

graduating before she did. She also has two aunts with college degrees, and both work at UTEP; they were always on her about college. Education is very important to her family, and her parents always told her that they "would love her to finish because they never got the opportunity to, so they always pushed." Out of the three children, they always wanted her to do the most because she excelled academically. School has always come easy for Isabel, so she did not know how to handle it when she started struggling in school. Isabel stated:

> I was really taken back because I had never struggled in high school. I graduated with a 95 average, and I never really had to apply myself. And then in college, when I took that course, most courses, I just couldn't believe it; I couldn't believe that I was struggling so much.

When asked if Isabel understood the consequences of failing a course and being placed on academic probation, she stated, "I didn't really understand how my GPA would be affected" by failing a class. Furthermore, she said:

> I just didn't understand what college really meant as in what each course counts, and each course does make a big impact on my overall GPA. So, I was really shocked. I mean, I really did try, but not as much as I should have.

Isabel stated that she felt overwhelmed by college and had a difficult time transitioning to the college environment. She said that "life really hit me that semester" because the semester Isabel wound up on academic probation, she also experienced personal trauma when both of her grandparents passed away back-to-back. She said:

> I was emotionally not okay. They're the first people I ever knew to have passed away, and then they both passed away back-to-back, and it put a big strain on my family financially because everyone was fighting. It was a rough year for everyone. So, I think at that point, I didn't care about school. I really wanted to go out with my friends and be distracted. So, I wasn't applying myself at all.

With the difficult transition to college and her grandparents passing away, Isabel found herself on academic probation. She felt ashamed and upset with herself, especially because she lost her Federal Financial Aid. Moreover, she would see her friends excelling and become sad.

She said, “I didn’t want to talk about school with anyone, so I started to isolate myself and school and not be around people because I didn’t want to tell them I’m struggling. I’m on academic probation.”

When Isabel lost her Federal Financial Aid, she could not afford college because she had siblings in college. Her parents could not support three children in school, so it was up to Isabel to pay her tuition. She skipped a semester, started working full-time, and started partying. Her parents knew she was on academic probation and were not happy with her, and there was a lot of tension between them. They finally told her, “if you’re not going to go to school, if you’re going to start working, then you have to start contributing here.” They would only let her stay home without paying if she were not going to school. It was a “big wake-up call” for her.

Moreover, her aunts who worked at UTEP saw her grades and were putting pressure on her. They were upset with her because it took them years to get their degree. One aunt stated, “I know the struggle. It doesn’t matter when you finish as long as you finish.”

Isabel gave up her full-time job to focus on school. Even though she was on academic probation, she found a position at UTEP where she could work part-time and did so for about two years. When she ran out of money for tuition, she told her boss that she would have to find a full-time job to save money for school. Her boss at UTEP took it upon herself to work it out so that Isabel could transition to full-time employment. Isabel still works full-time at this job. It is an important and influential aspect of her getting her degree. Her co-workers have played a large role in her doing well in her classes and have become her primary support system. They encourage her, provide advice, and push her to excel. Isabel said, “I didn’t want not to be able to work and be embarrassed and be let go because of my grades. That’s when I really brought it up because of how badly I wanted to stay at the department. I love working there.”

Another event that helped Isabel make the conscious choice to turn her academic career around was when she saw her best friends go to medical school. Isabel had a group of friends from high school with whom she was very close. All four of them had dreams of going to medical school. While Isabel had changed her mind about that, it was a real awakening when she saw the other three get into medical school. She found herself being the only one not finished with her degree. She was watching them all graduate, and she felt left behind. It caused her to want to start doing better because she "didn't want to be just so secluded and sad that I wasn't keeping up." That was when she told herself, "Okay, I need to get it together because these girls are doing amazing." She knew she had the capability; she just needed to apply herself.

When Isabel was asked what contributed to her overcoming academic probation, she stated that she purposely started to connect with other students and used study groups, saying:

> I started realizing that the quieter I was in class was when I would struggle the most. So, I really tried to make friends or at least acquaintances with people that are willing to study and put in the hours.

Furthermore, Isabel stated that she is "terrible at math." She has never done well in it, and she struggles with understanding it. However, Isabel believed that her developmental math instructor was critical in moving forward in her degree. She stated that "the professor was always pretty much available, and he was always super helpful. I was able to finish the course because of the professor." The developmental math instructor helped her believe in herself and in her ability to succeed in math. It was a significant turning point for her in achieving her goals.

Isabel stated that her second advisor was influential in her overcoming academic probation but not at first. Isabel initially was a Forensic Biology major, and in her first academic advising experience, she got advised with a group of forty students. Isabel described this made her feel overwhelmed and unimportant. When she changed majors to Health Sciences, she had a single advisor who helped develop an individual plan to clearing academic probation and

complete her degree. She described how the first time she went to see him; he had her degree plan printed out and knew about her academic probation. The academic advisor said, “look, I’ve seen your transcripts. You have a lot of good grades. You just really got to push yourself.” The advisor paid attention and focused on what Isabel wanted for her future, asking her what she wanted to do with her life. The advisor adjusted her major to align with her goals, and Isabel felt a sense of belonging.

To Isabel, success is about finding a job where one is happy and does not hate or dread going to work. She said she wanted to wake up and enjoy her life, especially in her job. She also stated that while she wishes she were an ‘A’ student, that isn’t always the case. She said that “as long as I pass and I know I did as much as I could to get that grade and pass, or at least with an A or B, I don’t want any more C’s. Then I’ll be happy with myself.”

Isabel said she is successful now because she grew up a lot because of being placed on academic probation. She now knows what direction she wants to take in life and knows she wants to finish her degree. She said, “I want to have those credentials behind my name; I want to be able to say I finished school on my own.” She also wants to make her parents proud by completing her degree.

One of the positive aspects of being placed on academic probation was that Isabel realized that she had the ability and skills to get out of it. She learned that when she applied herself, she could bring up her grades. She said:

> I learned how to study, how to push myself. Once I was able to bring everything back up, I was really proud of myself. It’s more of a mental thing for me. Once I saw the good outcome is what has got me out of there. Even though it was hard, I was able to get out of it.

When asked what Isabel would have like to have known before being placed on academic probation, Isabel said she wished she would have known about all the resources that UTEP

offers. For example, she did not have a computer. It was not until she was on academic probation that she learned UTEP had a program where students could check one out. Not knowing about available resources hurt her ability to succeed in her class. She also stated that she wished she would have known about the consequences of failing courses. Isabel does not believe she got a fair warning about what academic probation meant because she never had a one-on-one meeting with her academic advisor.

Isabel shared that to be a successful college student; students should find and use all available resources provided by UTEP. She also says students should talk to their professors about their grades and work. Furthermore, she states that students should "find someone who's on the same level as you in that class, or maybe even smarter" and ask them to study together if they are willing. Lastly, she states that it is important for students to find an academic advisor that they "connect with or someone that is really open to seeing their personal path or how their situation impacts their academic path because that's what I did, and I think it helped me so much."

Mateo

Mateo is a 23-year-old male who is the first in his family to attend college. Education was always important to his mom, and she motivated him to be better and get an education. She would tell him:

> You should study. Life is hard if you don't study. I'm not promising you that life will be easier if you study, but at least it's like you have the key to open up a certain door and have at least more options.

Mateo wound up on academic probation after his first semester, and there were two primary aspects about his academic probation that stand out. First, when Mateo started college, his dad had a stroke. It was a difficult time for both his family and him. He had to help his mom

take care of his dad on many occasions, and it put an unusual amount of stress on all of them. Mateo said:

> Sometimes I did have to be home. Like someone's got to watch out for your dad, so yeah, there were some circumstances, sometimes when I did have to miss class because I had to take care of my dad.

Secondly, Mateo never told his mom until he was close to graduating that he had been on academic probation. He felt too ashamed to let her know, and he did not want to disappoint her. Mateo said, "I felt ashamed; I didn't want to tell anybody about my situation, you know?" So, during the semester, Mateo was suspended; instead of going to class, he would work. When he finally did tell her, his mother was not mad at him, but she told him, "well, good that you're better now, but come on!"

Mateo had always known he wanted to major in education, but his friends and family put pressure on him about that choice, saying that "you won't make enough money as a teacher." So, in the beginning, he majored in architecture, but he did not like it. He found himself in a place where the classes were not interesting, and he was struggling to do well. Mateo said that he did not feel he was pursuing a career that fulfilled him or was something he wanted to do. He lost the motivation to do well because he did not like the classes.

Mateo found the transition from high school to college difficult. He stated that "I was coming from a high school that didn't really prepare us that much for college. It was more focused on passing your state exams." Mateo felt they did not start to prepare him for college until his last semester as a senior, "that's when they got us college ready."

When asked if Mateo understood the consequences of failing a class and being placed on academic probation, he said:

> Not until it happened, up until they told me, you're not going to be able to register next semester; you're suspended for a semester. That's when I was like, Okay, wow.

He also said, “honestly, I didn’t feel that I; I just got an email, before I was suspended, I just got an email.”

The email explained that he was on academic probation, but that was it. There was no information about the consequences. Mateo stated that there was no “[this is what] would happen or anything.” It was not until the end of the semester that he figured out he would not be able to register the next semester. At the time, Mateo was paying for school out of pocket, so it was a big blow. He said that those semesters he failed “is money thrown into the trash.”

Mateo felt ashamed for lying to his family, and he knew that he could not keep that up. When Mateo was asked about what helped him decide to turn his academics around, he said, “I knew for sure that I had to come back after that semester of probation because I had to fool them [his parents].” So, Mateo decided to return to college. More importantly, Mateo decided that he needed to focus on something he enjoyed and switched his major to History, the field of study, and the career he liked. He also said that on the first day of class, he said to himself, “Okay, you got to get serious, you got to step up your approach to this thing,” and he started to work it out from there. Mateo’s motivation to do better came from his family because he wanted to make his mom proud. Mateo said that “honestly, at certain points, if I wouldn’t have had that push to keep going, or that pressure at least, of *you, have to go to college*, I would have probably dropped out after that suspension period.” He said that his reason for sticking with it was not always for him but his mom. He also had the “personal motivation to not struggle that much in life, hopefully.”

Mateo defines success as more of a level of satisfaction with how much he has learned. He stated that he had passed classes where he earned an A but felt like he did not learn anything valuable. He will sometimes get a low B and feel as if he struggled in the class but learned a lot. He stated, “from an academic perspective, it’s more valuable to actually learn something, even

though you might not get the perfect grade." Mateo firmly believes that students should pursue a career that they enjoy. It is important for them to be interested and love what they do every day.

Once Mateo returned to school, he changed. Instead of not being engaged in his classes and academic career, he worked closely with his academic advisor, started interacting with his professors, and got involved at UTEP. Mateo said that he changed and is a different student. Before, "it was, how am I going to pass this class? Now my primary concern is to get the A."

His first semester back from academic probation, Mateo had to speak with his advisor to be cleared to enroll in classes. His advisor was helpful and explained what Mateo needed to do by laying out a plan and giving him a checklist. His advisor said, "You have to do this [checklist], and eventually, you'll be out of it." Mateo's advisor became a critical part of improving his academic performance. Mateo said that he started going to his advisor at least three times a semester, in the beginning, after midterms, and right before the end of the semester. He stated that "just go up to them, and they'll guide you along the way." He also said that if students do not feel they have a good advisor, get a different one.

The advisor gave him a starting point and resources. For example, the advisor recommended that Mateo attend office hours to get acquainted with his professors, get answers to his questions, or get help with assignments. Mateo said, "that was one of the changes I made that ended up helping me get out of probation, [seeing teachers] is something I definitely never did before probation."

Mateo started purposely working with his professors. He would explain his academic probation situation and go to office hours to ask for help on papers and assignments. Mateo said that professors pushed him to be better. He stated, "let's say I would turn in an essay or something, they would read it and be like, so it's good, but you can do better." They would give

it back to him to make corrections. More importantly, by getting to know his professors, he built relationships with them. Three professors became role models for him. Mateo stated:

> I want to be an educator, they [his professors] motivate me and stood as the role model for what a good educator looks like, so I guess that has given me the sense of how I feel here because I want to be like these people.

Moreover, Mateo says that by building relationships with professors, he finally felt like he belonged because "if someone treats you well in a group, the whole group treats you well. You feel like you belong there because they treat you well, they understand you."

In Mateo's situation, it was his professors who helped him get involved at UTEP. One of his professors got him involved with the Law School Preparation Institute (LSPI). His teacher told him that he should join and consider law school because he noticed how well he wrote. He is now a member of the LSPI and volunteers with them frequently. Another faculty got him involved with the Center for Civic Engagement (CCE), an organization on campus dedicated to serving the El Paso community through volunteerism. Mateo began and continues to work with them on many events.

Mateo had a friend who also had experienced academic probation that helped him through academic probation by offering advice on navigating his courses. His friend suggested classes to take that was easier to navigate and showed him how to look at Rate My Professor to determine which professor was the best to take for the classes.

When Mateo returned to school, he was only allowed to take two classes due to his academic status. Mateo said that this was a very positive step because instead of enrolling in five classes, he could ease into college and learn how to be successful. Mateo stated that "it allowed me to go to college, taking baby steps." He now takes five courses each semester and is considering going to law school.

When asked what he would have like to have known before being placed on academic probation, Mateo said:

> I would have at least even like to know what academic probation was; I didn't; honestly, I had never heard of it until it happened to me. And I guess it mainly has to do because I was the first person in my family to ever attend college, even from friends, so I didn't know that you could get suspended for low academic performance. I even feel a little frustrated saying that right now, but if it was the case, know the consequences of failure. And it was my responsibility to know, but yeah, I guess, know what can happen if you don't do it.

Moreover, when asked if there was something that Mateo would change about his academic probation, he said:

> The semester that I was on probation [I would] take it more seriously; it would have saved me. I would probably do very badly for that one semester. But definitely that, the moment I got that email, if I would've known what the consequences would be at the end of the semester, I would've definitely taken it more seriously and actually opted to be like, you know what? Don't pursue that career; just focus on what you want and transfer to it eventually.

Furthermore, Mateo said that it was not until he returned from academic probation that he found out about all the available resources UTEP had to offer, such as tutoring and writing centers. Mateo feels that if he been shown the importance of using campus resources and how they could help him succeed academically, to begin with, he would not have struggled as much.

Mateo says that for students to be successful at getting off academic probation, they should limit the number of classes and suggest enrolling in only two courses. Furthermore, Mateo recommends that at least one of those classes is in a subject they enjoy. Students should use the Rate My Professor website to determine which professor "has a good rating, and where they have a better chance" of navigating the class. Mateo also said, "it is vital to have friends around who already have taken classes to seek advice and keep your family close because they will motivate you."

Mateo said that utilizing his professor's office hours was critical and helped improve his grades. He said that "what ended up getting me good grades with the class was taking advantage of going to office hours." He also said:

> Yeah, just talk to your instructors; it's just so easy. And they know that you're trying, so do that, especially if you're trying to get out of suspension or avoiding suspension; just reach out to the instructors for anything.

Lastly, he recommends that students must make that decision to change, stating:

> Talk with yourself prior to the start of the semester, and one of your few responsibilities that should help you out in the long run, take it seriously, look at the long-term goal, and use that as motivation when you are not motivated to attend class.

THEMES

In qualitative research, data collection and analysis coincide. However, the analysis process will continue throughout the life of the study. In this case study, it is essential to note that the interviews occurred after students cleared academic probation. As such, students could look back on their experience to reflect on what worked and what helped get them off academic probation. As the research was conducted, the researcher began to see similarities in participants' responses regarding what helped them clear academic probation. Analyzing the data, two themes emerged regarding what helped underprepared math students succeed at getting off academic probation. The themes identified by the researcher were motivation and involvement.

Motivation

Motivation was a decisive factor in getting off academic probation for all four participants in this case study. Motivation is defined as the "reasons or reasons one has for acting or behaving in a particular way" and the "general desire or willingness of someone to do something" (Google Dictionary, n.d.). Each participant discussed the importance of motivation in their ability to turn their academic career around. Moreover, their stories revolved around four

types of motivation; self-motivation, motivation inspired by family and friends, the importance of their academic advisor in sustaining their motivation, and the influence of professors on their motivation. Each type of motivation played a significant role in the participants persisting.

Self-Motivation

Participants described a point in their academic career where they made a distinct decision to change. They wanted a better life for themselves and wanted to prove that they could accomplish their goals. Mateo stated that "the motive for me to come back was more like, you know what, I'm going to pursue something I actually enjoy." He also stated that the "personal motivation to not struggle that much in life" was important to him and that at one point, he thought to himself, "okay, you got to get serious."

Isabel experienced the same self-talk or self-motivation. When Isabel saw her friends go to medical school, she thought to herself, "Okay, I need to get it together. I know I have the capability to do it; I just really need to apply myself." Isabel knew she was smart and could handle college; she just needed to decide to apply herself and get it done.

For Julian, it was more a fact that he was denied access and admittance into programs and organizations that drove him to evaluate what he wanted and what kind of student he wanted to be. Julian stated, "There are so many things that you get judged for about your GPA. I just believe sometimes that GPA can be such a shallow measurement of somebody, but it dictates so many things." This drove him to change and improve his grades; he said, "I just had to do it."

Lucia was motivated by the feeling of being inadequate. At first, she believed that she would always fail in college. However, once she was suspended, she decided to do what it took to improve her grades to have a better life. Lucia stated, "I decided I didn't want that [to struggle

financially] if I have a family in the future." Moreover, she said that "I had to talk to myself and be like, okay, get serious now. This is real. This is going to really affect your future."

Family Motivation

Each participant also spoke to the importance of their family in turning their academic career around. For Lucia, it was how she had seen her family struggle financially because her father did not have a college education. She saw him consistently struggle to find good-paying jobs, and she watched the burden it put on her mom. Lucia stated, "it would be hard for him [her dad] to find a job and help us out, how it would push back my mom and things she had to get for us." Seeing her mom and dad struggled pushed her to look at her long-term goals and make a change.

Mateo's mother played a critical role in helping him persist in college. He stated that "definitely my mom's motivation" played a role in deciding to turn his academic career around. His mother played such a large role in his wanting to succeed that he hid his academic probation from her. Mateo did not want to make "her ashamed of me." He wanted her to see his accomplishments and be proud of him. It took him many semesters before he confided in his mother that he had been on academic probation because he did not want to let her down. Mateo was motivated by his desire to make his mom proud, and this desire pushed him to excel.

Isabel's parents, siblings, and extended family's pressure and expectations motivated her to turn her academic career around. She saw her parents struggle to make it financially. She also knew that she was considered the smart one when it came to school, and her parents had high expectations for her. Isabel stated, "out of my siblings, I know they always wanted me to do the most because I always excelled at school." Her parents had big dreams for her, and they always pushed her to do well.

Moreover, because Isabel had two aunts who finished college and worked for UTEP, they always pushed her to keep going. They believed she could do it and understood how hard going to college could be; they told her, "It's okay [to fail]. It happens to the best of us, but you really need to get through it because you can't afford to keep retaking these classes." Isabel's aunts greatly impacted her motivation to turn her life around and continue her education. They continue to push her to complete her degree.

For Julian, his family also played a large role in his continuing his education as well. Julian said: that his parents were the type of parents:

> …that will throw you out in the middle of the water and let you sink or swim. If you don't, then you learn how to swim because they're not going to let you drown of course, but it's going to feel like it at times.

His parents told Julian, "you're an adult now; you're responsible for your life." Once Julian wound up on academic probation, the three of them came up with a plan to get him out of it. Without this support and family strength, Julian would have been less likely to succeed.

Friends

Each of the participants talked about a friend, group of friends, or co-workers that motivated them to push through their academic probation. In Mateo and Julian's case, they had a friend who guided them by offering advice on what courses to take, how to approach the class, and how to find good instructors. Mateo had a friend who would tell him, "take these classes, then take these instructors; their class is really easier to navigate."

Julian had friends from multiple avenues that supported him through academic probation. He had a girlfriend that would study with him, a rugby coach who mentored him through academic probation, and a friend who had faced academic probation who offered advice on how

to get off academic probation. Julian said that his friend "probably gave me the best advice, only because he knew where I was coming from." It was advice that fit his situation.

When talking about her friends, Isabel described a group of friends that she confided in while on academic probation. They were a big reason why she cleared academic probation, particularly by helping her pass her math courses. Isabel stated, "I told them [her friends] I was struggling, and I was on academic probation. Wherever or whenever I needed help, they would all help me – with whatever I needed."

When asked about friends who helped Lucia navigate academic probation, she focused more on her community college experience and the fact that she had no friends there; she never felt like she belonged. The connections that she made at UTEP helped Lucia find the space where she felt like she fit and belonged. Lucia said:

> I didn't really talk to many people there, but now that I came over here, I have a lot more conversations with people. Not necessarily about probation, but I am more open about talking about assignments or things like that.

Advisors

All participants described how they were required to work with their academic advisors once they were on academic probation. Three of the participants explained how significant the academic advisor's guidance was in creating a successful plan to exit academic probation. Lucia and Mateo shared that their academic advisor was a critical part of their exiting academic probation because the advisor became a mentor and coach. They relied heavily on their advisor for advice and would bring every question or problem they had to their advisors. Lucia said she worked with her advisor frequently, "probably at least five times a month. Every problem I had; I would really go to him." Mateo said that his advisor "was really good, and he gave me his cell number and his email, like if you have any questions along the way, please refer back to me,

come visit me." The advisor worked with Mateo to complete all the necessary items he had to do to return to school after academic suspension.

Isabel had both a positive and negative experience with advisors. In her first experience with advisors, she was advised in a large group with no one-on-one interaction. Isabel said she was with a group of 40, and "they [advisors] would just sign off" on her schedule. She felt unimportant and lost. When she transferred over to a different college, she received guidance. Isabel stated that "I walked in, and they were ready to see me. They had my degree already printed out for me." Receiving individual attention and feeling that her advisor cared for her well-being and success helped Isabel change how she handled and behaved in her classes.

This was not the case for Julian, his academic advisor was no help, and he felt like his academic advisor did not support him. He stated:

> I had the same advisor for two or three years. I don't know; he's never really went above and beyond to help me feel at least comfortable in what I'm doing. I would think just maybe a word of encouragement or something, you know?

While this may have been a negative experience, it motivated Julian to succeed – to do well despite his advisor. Julian stated that facing the stigma of being on academic probation by his advisor spurred him on. He said it "didn't stop him from going to career fairs or going to organizations through some kind of event." He purposely went out to find those who he connected with to find success outside of the classroom.

Professors

Nowhere does a teacher make more of a difference than when in the classroom teaching, and a great teacher can excite and encourage students to surpass expectations. In this case study, the professor's role was critical to the students improving their GPA and getting off academic probation because they became role models and mentors. Professors recognized and

acknowledged their hard work and extra effort they put into their assignments, their willingness to do extra credit or redo assignments, and their ability to grow. Three of the participants spoke to the professor's importance in changing their academic path and motivating them to keep going. Mateo said that his professors pushed him to do better work and guided him. His professors told him, "this is good, but you can do better." Another professor told Mateo that "I've noticed you write really good papers for me; you turn in good pieces for me, you should try this program out." The professor turned him on to the Las School Preparation Institute, and Mateo became and still is an active member of the organization.

Lucia said that her "professors are really helpful, are really kind, and they help you." Moreover, Lucia said:

> My professor saw that I was doing the effort, I was going to the study sessions, I was talking to him frequently, asking him [questions]. I think that helped me a lot in the class because he saw the effort I was putting in.

For Isabel, she found that the more comfortable she got at asking questions and participating in class, the more she did well. She specifically brought up her developmental math instructor, who worked with her consistently outside of class. Isabel said, "I would go to the lab pretty often. The professor was always pretty much available, and he was always super helpful, so I was able to finish that class." Isabel's developmental math instructor helped her believe in herself and her ability to understand math.

Involvement

Involvement was the second theme to emerge from the data. Participants described how being involved on campus played a large role in successfully getting off academic probation. Each of the participants found a place on campus where they fit in and belonged. For Isabel, it was working on campus. Her co-workers became the place where she became involved. Isabel

stated, “I wanted to stay at that department. I love working there.” She also said that her boss is “one of those that when you talk to her, she makes your problems, her problems. She’s really attentive, and she’s like that, so I appreciate her so much.” Being involved with work, being proud of the work she does for UTEP, and being supported by those she works with has been a driving factor in completing her degree.

Julian found his place with student organizations. He headed up the men’s rugby team, joined the Student Engagement and Leadership Organization, and joined a fraternity. He gains his confidence from being a leader in all these organizations. While Julian understands that he struggles academically, he has learned to appreciate his other talents. Julian said:

> I took on leadership roles in what I could. In organizations, people always kind of look to me as a leader, and that has helped me be the best person I can be, always. Because it’s just not about being good at one thing in your life, one field, it’s about everything, being balanced. So that’s helped me.

Moreover, Julian stated:

> I went to a different outlet, and I helped establish the rugby team, and that has really been a success of mine because I was able to give other men and women an opportunity because we have a women’s team now. The opportunity to just play and have an outlet to express themselves. That has opened so many doors.

Mateo found his place through volunteerism with the Center for Civic Engagement, participating in the Las School Preparation Institute organization, and interning at the Las Americas Immigrant Advocacy Center, where he works at detention centers to conduct legal intakes for legal representation. Through volunteering on campus and participating in events that benefit others, Mateo increased his self-confidence and belief that he can be successful at whatever he chooses to do. Mateo stated that “you have to step up to where you’re supposed to be.” He now knows and believes that he will complete his degree because of the lessons he has learned working with these organizations.

Lucia found her place in the classroom. She made concerted efforts to get involved in her classes and make connections to other students. Lucia said that she attended study groups, went to tutoring sessions, completed extra credit assignments, and visited professors when she needed help or to ask questions. Thus, the classroom became the place where she got involved. Lucia spoke about how she got to know other students well enough to know when something was bothering her. She said, "I even had some people that would ask me if I was feeling okay." At first, Lucia was surprised when her professor and peers noticed her. Ultimately, however, Lucia realized that they were kind to her because they believed in her. For her, the connection to other students was critical to helping her become a successful student.

ANALYSIS

When the participants first started college, they felt overwhelmed, over-stimulated, and lost. Each participant was a first-generation student, although Lucia's father was in college at the same time as she. Each participant struggled to transition to college life, in part, because of a lack of understanding of the college environment and self-doubts. This supports the research by Reyes and Nora (2012) that found first-generation Hispanic students started college with a lower confidence level in their abilities (p. 12). In addition, lack of college knowledge contributed to participants being placed on academic probation because none understood how grades impacted their GPA. Once they wound up on academic probation, they felt ashamed, embarrassed, and isolated, afraid to let others know they were doing poorly.

> I felt ashamed; I didn't want to tell anybody about my situation. (Mateo)
>
> I was super overwhelmed; I was ashamed and really upset with myself. (Isabel)
>
> It's just overstimulating with just everything, social life, trying to get your academics right. I was disgusted with myself. (Julian)

> I felt a little discouraged. I felt like I didn't want to go back to college. My mindset was a little bit more that I couldn't do it, that that was going to be the outcome for the rest of my semesters and the rest of my college career. (Lucia)

William Spady's work on student retention highlights the importance of a student's grades to staying in school. Spady's model indicates that students can move from grade performance to dropping out of college because, in many cases, a student's academic performance is so low that there is no alternative but to withdraw from school or be placed on suspension by the institution. In this case study, all participants were placed on academic probation due to poor academic performance. Moreover, two of the participants were suspended from UTEP for a time. They did not choose to leave; they were forced to leave because of their grades.

Spady, Tinto, and Astin's retention theories show that a student's sense of belonging to the institution and the significance of relationships built with faculty, staff, and peers are critical in increasing persistence. For these participants, both the sense of belonging and the relationships they formed with others on campus impacted their ability to clear academic probation. Alexander Astin posits that the more students are engaged in an institution, the higher chance they will remain enrolled (Astin, 1984). This rang true for all participants in the study, and as they started taking an active role in their learning and engagement on campus, their grades increased.

Furthermore, Vincent Tinto suggests that the "stronger the individual's level of social and academic integration, the greater his or her subsequent commitment to the institution and the goal of graduation" (Pascarella et al., 1986, p. 155). Commitment for these participants was born from the motivation to continue working towards their degree. So, while participants found their path through academic probation, two main themes emerged from the data. The first is having the motivation to them decide to turn their academic career around. The second is purposely getting involved with and connecting to faculty, staff, and peers.

Motivation

The motivation to succeed at college is a complicated issue that can be impacted by multiple people at varying times. All student participants had an internal motivation to make a better life for themselves. They made a conscious choice to turn their academic careers around by improving their grades. Thus, self-motivation was a vital component of the students clearing academic probation because once they made that decision, they changed their behavior.

The motivation to succeed can also come from many other places. In the case of these students, their motivation and desire to get off academic probation came from the influence of their family and friends, academic advisors, and professors. They each described how they experienced support and encouragement from others that helped push them forward. First, the influence of family came through loud and clear from each of the participants. Students' feelings ranged from not wanting to make their family ashamed of them to wanting to make them proud for continuing towards their degree. Each of them described watching their family struggle and seeing how hard life could be without a degree. They were compelled to make something better of themselves and not to struggle as their parents had struggled.

More notably, participants overcame academic probation because of the closeness and encouragement of their families. As noted by Allison and Bencomo (2015), "family is of the utmost importance in the Hispanic culture; it has been described as the most important factor influencing the lives of Hispanics" (p. 57). For the participants in this study, familism and the family's impact played a large role in their ability to exit academic probation.

Secondly, friends and acquaintances played a vital role in getting the participants getting off academic probation. Without that support, most felt they would not have made it through academic probation. Their friends advised, encouraged, and supported them, motivating them to do the work necessary to clear academic probation.

Academic advisors also played a critical role in students clearing academic probation. They motivated, encouraged, guided, and helped students discover their strengths. The participants' connection with academic advisors helped them take the steps needed to improve their grades. Three participants in this study experienced validation from their academic advisors, which impacted their belief in their ability to clear academic probation. Rendón states that validation is a way of communicating and understanding another person's perspective (Rendón & Munóz, 2011, p. 12). Validation acknowledges and accepts another person's thoughts, feelings, perceptions, and behaviors as understandable (Hall, 2012).

In this case, the participant's academic advisors treated them as valuable members of UTEP by instilling a culture of care. Their advisors frequently met with the participants, connected with them via email and phone, and guided them on the steps to take to get off academic probation. Their mentorship positively impacted the participants' ability to clear academic probation because they could call on them for advice at any time. Moreover, the relationships the participants developed with their academic advisors became critical to their sense of belonging and academic success.

Spady, Tinto, and Astin stress the importance of the institution's relationship with the student to retain students. When institutions create environments that demonstrate students' matter, students are more likely to be involved. This involvement positively impacts retention and persistence, allowing more students to complete their degrees and institutions to increase the number of students who graduate and (Astin, 1977, 1984). For these participants, academic advisors were critical to ensuring that they had the encouragement, guidance, and encouragement they needed to navigate their way through academic probation.

Professors had an enormous impact on the participants' motivation to continue their education. Rendón and Munóz (2011) have shown that validation is about helping students "believe in their ability to learn" (p. 18). Nora et al. (2011) stated that a critical step in validating students is a sensitivity on the part of the instructor and an affirmation as valuable contributors to the learning that is taking place in the classroom" (p. 35). Professors helped the participants in this case study believe in themselves and believe that they could be successful college students. Mateo said it best when he stated, "knowing that someone knows or thinks I have the capacity of turning in quality work, that gives you self-confidence."

When underprepared math students wind up on academic probation, they have a tall hill to climb to clear it. Validation is key to their motivation and ability to persist. For the participants in this study, validation came from multiple places. The participants' family and friends, academic advisors, and professors played a critical role in maintaining the determination to clear academic probation to persist towards degree completion. At the time of this research, all four participants were within a semester of graduating from college. All had high hopes for their future and believed that "if they could overcome academic probation," they could overcome any obstacle they faced.

Involvement

None of the four participants participated in the same activity or organization, but all found a place where they connected with others. Just as participants have unique personalities, strengths, and weaknesses, each also builds connections with differing and unique people. This research supports Spady, Tinto, and Astin's retention models regarding the importance of social integration to staying in school. Spady's model stresses the importance of students having like-minded attitudes with others and the importance of social integration on student's satisfaction

with school (Spady, 1970, p. 77). Tinto's model speaks to social integration being an important factor in persisting in college. Alexander Astin posited that being involved impacts a student's development and is directly related to the extent to which the student is engaged at the institution (Astin, 1984; Tinto, 1993).

Furthermore, Schlossberg (1989) stated that "involvement creates connections between students, faculty, and staff that allow individuals to believe in their own personal worth" (p. 1). Each participant in this study found their unique space to belong and found the connections necessary to fit in at the institution and find their home. Moreover, each participant's self-worth and belief in themselves grew.

Julian participated in athletic and social events where his leadership skills could shine, and he could build relationships with others outside of class. He felt a strong sense of pride in his accomplishments outside of the classroom, and he found a sense of belonging and purpose by helping other students grow. Julian understood that he struggled academically but that improving his grades was necessary to keep working with the rugby team, the student engagement and leadership center, and fraternity. He worked hard to ensure that his GPA was always high enough to continue working with the organizations. This supports William Spady's Sociological Model of the Drop out process, where grades and social integration play a large part in students staying in school. Spady posits that students succeed when they have extrinsic and intrinsic rewards. Extrinsic rewards are tangible; it is a physical item, or something physically given to one for accomplishing a goal. For Julian, the reward of being placed in leadership positions for the SELC and the rugby team was tangible recognition of his talents and abilities. This recognition provided him with a sense of belonging and support. He worked hard to keep his GPA over 2.0 to continue to participate in the activities.

Intrinsic rewards are intangible, a sense of achievement, or self-satisfaction. Julian had a strong sense of pride and a sense of accomplishment from developing the rugby team and leading university leadership conferences. It was this sense of belonging, achievement, and self-satisfaction that kept him moving towards his degree. Moreover, this supports Alexander Astin's Theory of Student involvement that posits that the more students are engaged in an institution, the higher chance they will remain enrolled. For Julian, had he not built the connections outside of the classroom and experienced success with the organizations he participated in, he would not have kept going to college. He would have dropped out. Thus, engagement was key to his remaining in school

Validation was also a key component of Julian staying in school. Julian felt validated by those he worked with outside of the classroom. The encouragement he received from his rugby coach, students involved in the SELC events, and his fraternity brothers played a crucial role in helping him succeed. Rendón's (1994) research showed differences, particularly that "non-traditional students do not perceive involvement as *them* taking the initiative. They perceive it when someone takes an active role in assisting them" (p. 44). Furthermore, Rendón (1994) showed that the role of the institution is active, meaning that faculty, staff, and administration must purposefully and with intent reach out to students and design activities that encourage "active learning and interpersonal growth" (p. 44). In Julian's case, his rugby coach recognized Julian's talents and encouraged him to create the rugby team. Leadership from the SELC also supported and encouraged him to take a role in leading other students. They believed in his ability to help others. As Julian was validated by faculty and staff, his confidence and belief in himself grew. It is the primary reason for his persistence in college.

Mateo focused on activities where he could help others. As his confidence grew in his academic abilities, he participated in organizations and internships where he could give others what had been given to him. Mateo volunteered with the center for civic engagement at food drives and other events. He worked with the immigration detention center to help process those from other countries hoping to come to the United States for a better life. Mateo found his sense of belonging, in part, by assisting others to realize that they too could improve their lives.

Moreover, Mateo felt a strong sense of validation from his professors. They played a large role in his continued success, and it was because of them, he got involved in extracurricular activities. Mateo felt that he mattered to those he worked and engaged with at the university.

Scholars such as Tinto and Astin put the success or failure of student persistence and retention on integration. Specifically, Tinto (1993) suggested that students' persistence was directly related to a student's integration with an institution's academic and social structures (Johnson et al., 2007, p. 526). Tinto further defined integration as engagement in the institution and that for students to become engaged, they must learn to see themselves as valued members of the community. "In other words that they matter and belong" (Tinto, 2017a, p. 3). Mateo learned to see himself as a valued member of the UTEP community, that he mattered, and that he belonged to the university. These feelings helped him overcome academic probation to persist to his degree.

Isabel found her sense of belonging by working on campus. Isabel felt embraced and supported by her co-workers and boss. Initially, Isabel worked part-time for UTEP but quickly found that she needed to work full-time to save money for school. Isabel's boss helped her get a full-time position at UTEP to earn money needed for her school. Her co-workers and boss encouraged her to keep going to school, which was critical in turning her academics around.

Isabel knew that they believed in her ability to excel at college. As Rendón (1994) proved with her Validation Theory, "when external agents took the initiative to validate students, academically and/or interpersonally, students began to believe that they could be successful" (p. 40). The researcher's data supports and confirms this to be true. Validation plays a crucial role in a student's sense of belonging.

Moreover, Schlossberg (1989) stated that "involvement creates connections between students, faculty, and staff that allow individuals to believe in their own personal worth" (p. 1). These connections allow Hispanic students to fit in at the institution, find their home and self-worth, and help them persist towards their degree. Furthermore, Schlossberg (1989) defines mattering as "the feeling that others depend on us, are interested in us, are concerned with our fate" (p. 3). For Isabel, her work at the institution was where she felt validated, fit in, and found her home. Her desire to keep her job and remain connected with co-workers pushed her to improve her academics and persist towards her degree.

Lucia found that her professors and peers gave her strength. Lucia wanted an authentic college experience, and that meant connecting with professors and peers. She took proactive approaches and changed how she interacted with others in her classes. As such, she gained a sense of confidence and belief that she could complete her degree. She felt validated by her professors and peers, which helped spur her forward. When validation is present, "students feel capable of learning; they experience a feeling of self-worth and feel that they, and everything they bring to the college experience, are accepted and recognized as valuable" (Rendón, 1994, p. 44). At the time of the interview, Lucia was one semester away from graduating. She learned to believe in herself and her abilities. She also knew that she could do well in college because of the

validation from professors and peers. The findings in this research support Rendón's Validation Theory that when students feel supported and are encouraged to succeed, they do.

Each participant had an individual path to getting off academic probation that was driven, in part, by their ability to find and connect to others. By becoming involved at UTEP, these students found a reason to go to class, to study hard, and to take the steps needed to improve their GPA – even when it meant stepping out of their comfort zone. Moreover, as their grades improved, their belief in themselves grew. These students' experiences support Spady, Tinto, and Astin's retention theories, as well as Rendón's Validation Theory. Each participant felt they belonged at the institution, that they had the ability to complete their degree, and learned to see themselves as valued members of the community.

SUMMARY

When institutions create environments that show students they matter, students are more likely to be involved. This involvement positively impacts retention and persistence, allowing more students to complete their degrees and institutions to increase the number of students who graduate and (Astin, 1977, 1984). Chapter four presented the results and analysis of the data collected from interviewing four underprepared Hispanic math students who overcame academic probation to persist towards their degree. This research aimed to gain insight into what worked in helping students persist. The main elements included a detailed explanation and thorough account of the data collection and analysis process used to conduct the research, the pre-demographic data and in-depth description of each participant, and the identification, clarification, and analysis of emerging themes that answer the research questions. The research showed that student motivation and involvement played a large role in students clearing academic probation. Moreover, feeling validated by faculty, staff and peers increased the

participants' sense of belonging. By studying students who overcame academic probation, the researcher found that a sense of belonging and change in academic strategies was crucial for an underprepared math student to clear academic probation at a Hispanic Serving Institute.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

The purpose of this case study was to learn how underprepared math students who were on academic probation at a four-year Hispanic Serving Institution (HSI) succeeded in getting off academic probation. The research delved into the strategies students used to improve their grades and explored whether a sense of belonging played a part in their success. While each of the participants found their unique path through academic probation, two main themes emerged from the data. The first was having the motivation to turn their academic career around. The second was purposely getting involved and connecting with faculty, staff, and peers.

RESEARCH QUESTIONS

This case study focused on understanding how underprepared Hispanic math students got off academic probation. To get a clear picture, the researcher interviewed four students guided by two over-arching questions:

1. What strategies contributed to a developmental math student's ability to exit academic probation at a Hispanic Serving Institution?
2. Does a sense of belonging impact a developmental math student's ability to exit academic probation?

STRATEGIES

When interviewing the participants, it became clear that they changed their behavior once they decided to turn their academics around. Before being placed on academic probation, all tried to go it alone. They did not participate in class, did not use any resources offered to them, did not

attend professor's office hours, nor engage with their peers. The participants were isolated and unsure of how to pass their classes and navigate college. However, after they were placed on academic probation, they decided to turn things around, they became proactive about learning how to be a successful college student. They asked for help and used their academic advisor and professors' guidance to create a path to success

An important part of this path to success included the case study participants changing their academic strategies towards their classes. All four participants had similar responses on what academic strategies helped them pass their classes and realized that had they used these strategies to begin with; they most likely would not have wound up on academic probation. The participants shared that their new strategies for success included:

- Communicating with their academic advisor consistently.
- Attending class every day and sitting up front where they had to pay attention.
- Participating and engaging in their classes.
- Completing their homework and reading their assignments before class.
- Seeking out other students to study with, talk through assignments, and connect with on course content.
- Introducing themselves and purposely building a relationship with their professor.
- Attending their professor's office hours.
- Seeking advice on written work before submitting it for a grade.
- Asking questions in class and following up with additional questions during the professor's office hours when confused about content.
- Using resources on campus, including tutoring centers, technology centers, and writing centers.
- Completing any extra credit work assigned.
- Participating in study groups and study sessions to learn the material.

- Seeking out someone in the class to study with a similar or better understanding of the content.
- Listening with purpose in class.

All participants understood that the more invested they were in their classes and the more work they put in, the better their grades were, and the more they succeeded academically.

Belonging

Through interviewing developmental math students who cleared academic probation, it became clear that the more the participants felt they belonged at the university, the more they believed in their ability to succeed at college, pass their classes, and achieve their degree. The sense of belonging gave the participants the confidence and strength to find a place where they fit in and could connect with others. Moreover, the more they connected with their academic advisor and professor, the more they felt like they mattered and that their success mattered. Knowing that someone believed in their ability to succeed at college helped them overcome their academic barriers to find success for these participants.

For these participants, being validated by their professors, academic advisors, and peers increased their sense of belonging, which became crucial in their ability to clear academic probation. Moreover, the sense of belonging was cyclical. As the participants began excelling academically, they grew more confident in their academic skills, which increased their sense of belonging. Just as importantly, as the participants gained a sense of belonging, they started achieving academically.

DISCUSSION

Several factors influenced participants' motivation to improve their grades and clear academic probation. Family and friends, academic advisors, and professors all played a part in

their success, and each provided participants with reasons for why they should continue working towards their degree. For these participants, though, the family had the most significant impact on whether they stayed in school. The participants strove to have a better life than they had growing up, one where they could support themselves. Familism is a characteristic of Hispanic students that influences how Hispanic students interact and participate in higher education. This family dynamic was critical to their success. The desire to make their parents and family proud weighed heavily on the participants' decision to persist towards their degree.

Additionally, participants did not want to let their families down, particularly their mothers. The participants' mothers had a stronger influence on them than any other family member. The participants' mothers encouraged them, pushed them, and were invested in their success. As a result, the participants wanted to make their mothers proud of them by showing they could complete school. It was a strong dynamic that kept participants working towards completing their degree.

Furthermore, this research supports the findings of Schlossberg (1989), Johnson et al. (2007), Cole et al. (2020), and Dueñas and Gloria (2020) who have shown that mattering is a vital aspect of belonging. These researchers found that mattering provides students with the personal recognition and attention that they require to persist. In this case, all the participants had people on campus who showed interest in them and cared about their success. It was hugely impactful because it instilled a sense of trust in their ability to learn, freed them to express themselves, and helped them realize that how they constructed knowledge was as valid as the way others construct knowledge (Rendón, 1994, p. 47). The participants' connection to their professors, academic advisors, and others helped create an environment where the participants

felt validated and supported, felt like they belonged, that someone believed in them and that they mattered.

The most elementary form of mattering for students is the feeling that another person shows interest in or notices them. This research supports Strayhorn's research on belonging because it showed that a sense of belonging and validation transformed participants' educational experience from doubt and insecurity to confidence and assuredness. Furthermore, it provides proof that Strayhorn's definition of belonging, in terms of college students, as "students' perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus" is correct (Strayhorn, 2019,p. 4). For this research, once students felt like they belonged, the believed in their future success and all participants were confident they would complete their degree.

While all the participants had others who influenced their motivation to stay in school, the participants' conscious decision to turn their academics around was the key to them being successful. Once the participants decided to persist, to not give up on their dream of obtaining a college degree, it was then that they changed their strategies for school and built relationships with others on campus. This decision to persist was a pivotal point in their academic careers because it led to their academic success and an increased sense of belonging. No other factor had as much impact on clearing academic probation as their individual decisions to turn their academics around.

UNEXPECTED FINDINGS OF THE RESEARCH

The research provided a robust and thorough account of how students cleared academic probation. It also offered additional unexpected information on how to help students succeed

academically. These unexpected findings can be valuable to an institution's ability to help students transition to college, achieve academically, and persist towards their degrees. After analyzing and synthesizing data from the interviews, three primary unexpected findings emerged from the research.

The first notable unexpected finding in the research was the students' lack of knowledge about academic probation. The participants did not understand what academic probation meant or what caused a student to be placed on academic probation. The participants had no comprehension of how their grades impacted their grade point average. Nor did they understand how the grade point average connected to being placed on academic probation. More importantly, though, participants did not understand the consequences of being placed on academic probation. Each participant fiercely described not understanding what would happen if they did not improve their grades.

Furthermore, each participant was surprised at being placed on academic probation and shocked that they found out via an email. It was not until they met with academic advisors that they understood what they would need to do to get off academic probation. Only then did it become real. All participants in the study asserted that they would have changed their behavior before being placed on academic probation if they had understood the consequences.

The second unexpected finding from the data was the significance of being placed on academic probation to the participants' emotional well-being. The emotional toll of being on academic probation was complicated for the participants, and they experienced many emotions. Participants felt isolated, ashamed, lonely, and like they were the only students doing poorly. Initially, they chose not to speak with others about how much they were struggling because they were embarrassed and afraid of what others would think of them.

Furthermore, participants were angry and disappointed in themselves because they could not do well in their classes. Participants were anxious and worried about the financial consequences of doing poorly in their classes. They feared disappointing their families and placing a significant financial burden on them because of failing at school and losing their financial aid.

Conversely, participants felt a sense of pride and accomplishment for improving their grades and clearing academic probation. They experienced a sense of achievement because they set a goal of getting good grades, and they achieved it. Experiencing academic probation was a life event that they will take with them forever, and each participant felt that if they could overcome academic probation, they could overcome anything. More notably, all participants stated that they would not change anything about their academic probation because it helped them grow. They all believe that they were stronger, more confident, and capable today because of their experience in overcoming academic probation.

The last unexpected finding prevalent in the research was two-fold. First, student autonomy was critical to their success, and secondly, involvement was student-driven. Autonomy is the ability to make choices and decisions according to one's own will and preferences (Merriam-Webster, 2021). For the participants in this study, the decision to be involved belonged to them. They decided on where and how to be involved at the university. They chose the organizations to join, the study groups to work with, the tutoring centers to visit, and which professors they visited during office hours. They made the first step towards involvement.

However, what also showed up in the research was that once participants actively started to participate in academic and extracurricular activities, others reciprocated. Once the students

began taking a proactive approach in their classes by showing up to and participating in class, engaging in discussions, asking questions, completing assignments, and participating in extra credit opportunities, their professors responded in-kind by encouraging, supporting, and affirming their value as students. Professors validated the students as capable learners, demonstrated a genuine concern for them, worked individually with them, and provided meaningful feedback supporting Rendón's Validation Theory. Rendón's Validation Theory posits the faculty's role is critical in the validation process because they are the ones who structure the class so that validation can occur (2002, p. 653). For this research, professors helped transform the participants into powerful learners, excited and confident about learning with a belief that they could and would complete their degree.

Moreover, once students started participating in organizations and activities on campus, they found that faculty, staff, and peers reached out to them, recognized their talents, and accepted them as a part of the group which supports the idea that validation can occur outside of the classroom. Moreover, this research reinforces the importance of interpersonal validation outside of class—which is when faculty and staff foster students' personal development and social adjustment (Rendón & Munóz, 2011, p. 19). This research demonstrates that connections and relationships impact a sense of belonging and help students persist.

While the research focused on determining the strategies students used to clear academic probation and whether belonging played a role in their success or not, the researcher discovered additional information. First, participants did not have a clear comprehension of academic probation. Every participant described not understanding academic probation and struggled to connect grades to academic probation. Secondly, being on academic probation placed an

enormous emotional toll on the participants. As such, the institution is responsible for developing programs to help students as they go through the academic probation process.

RECOMMENDATIONS

Based on the study, there are several implications for university administrators that merit consideration in helping underprepared math students and students, in general, overcome academic probation. The administration should focus on two primary areas: prevention strategies that help students avoid academic probation and specialized support for academic probation students.

Prevention Strategies

Forming a comprehensive set of strategies to help Hispanic underprepared math students avoid academic probation is critical in ensuring students achieve their educational goals. A comprehensive prevention strategy should include programs that (1) increase student, faculty, and staff interactions, (2) provide experiences that help students build their confidence, belief in themselves, and gives them the strength to accomplish their educational goals, (3) increase and enhance family connections to the university, (4) create and implement a "how to do college" curriculum focused on the skills needed for academic success, (5) provide opportunities for students to gain the necessary tools to navigate college life, make informed decisions, and to solve problems. The prevention strategy should include:

Transition to College Programs

- **Expanded Orientation:** The vast majority of students attend a new student orientation program before starting college. However, students get an overwhelming amount of information during this orientation, and many times, they struggle to retain all the information provided. Expanding orientation through the first semester by providing periodic workshops that focus on timely and relevant information can help them navigate their first semester.

- **Family Orientation:** For Hispanic students, the family is an influential and important part of their everyday life. To help students transition to college, their families should be involved in new student orientation. The more their families understand the demands of college, the more they can support their children.

- **Required Study Skills Course for Underprepared Math Students:** Many institutions offer a or study skills course to help students transition to and navigate college. However, in many instances, it is not obligatory. College administrators should ensure that the study skills course is designed with activities focused on engagement, belonging, agency, academic success, and professional preparation and mandate this course as part of the required curriculum.

- **Dedicated Faculty for Entering Students:** The best teachers should teach the most at-risk students. Entering Hispanic underprepared math students are at risk of not completing their first semester because of the unfamiliarity of the college environment and the adjustment to college. A dedicated group of faculty who focus primarily on entering students can help students adjust to college. Having faculty who focus on this student population ensures that students have the best opportunity to succeed. Moreover, the institution must identify the skills and assets required of faculty who work with this population.

- **Freshman Mentoring Program**: Mentoring programs are substantial resources that ensure students receive the full support they need to succeed during college. Mentoring promotes academic and career readiness, creates a culture of care, increases social and academic confidence, enriches students' communication and personal skills, and improves learning, leading to success. A mentoring program for first-year students should be offered that connects them with an upper-class mentor who can guide them during their first semester.

- **Early Alert System:** Early alert systems allow faculty members to identify at-risk students and share that information with support staff or advisors on campus. The alert system should identify students at risk early so that university resources and interventions can help students be successful. Moreover, the alert system must be institutionalized so that all faculty and staff understand the process.

Redesign the Syllabus and Retrain Faculty

Knowledge is power – for both faculty and students. Giving students information about grades, GPA, academic probation, and suspension more consistently and frequently can prevent students from getting on academic probation. The more knowledge students have, the more power they have to make good choices. As such, university syllabi should be redesigned, and faculty should be trained on academic probation.

- **Course Syllabi:** Course syllabi should be redesigned to include language about the consequences of failing a course. The new syllabus should consist of a definition of academic probation, a description of how students get placed on academic probation, and a general warning about the impact on financial aid. To prevent students from being placed on academic probation, students should know the truth about academic probation.

- **Faculty Professional Development:** Faculty need broad-scale training on academic probation to have informed, consistent, and frequent conversations about academic probation with their students. Professional development should include the number and percentages of students on academic probation at the university and students' general academic probation characteristics. Moreover, faculty need the training to recognize and identify students at risk of being placed on academic probation and given guidelines to help them engage with students. Faculty need to understand the problem before they can help fix it.

Specialized Support

Academic probation is a significant step the institution takes to let students know they are in academic peril. The university has a responsibility to help students improve their grades and turn their academic careers around. They do this by providing specialized support and offering unique programming to students on academic probation. This should include:

- **Academic Advising:** The specialized support should provide extra support from academic advisors skilled in working with students on academic probation. Advisors should work with students' multiple times during the semester on implementing steps to clear academic probation.

- **Assigned Course:** Students on academic probation should take a one-semester credit hour course during academic probation to help students identify and manage multiple barriers, create strategies to improve their grades, and develop an academic success plan.

- **Learning Community Classes**: Students on academic probation should be required to enroll in learning community classes to increase peer-to-peer engagement.

- **Financial Aid Counseling:** The university should provide individualized financial aid counseling for students and their families regarding Federal Financial Aid. In many cases, students are about to lose or have lost their financial aid. The counseling sessions will help students determine steps to keep or regain their Federal Financial Aid.

FURTHER RESEARCH

A literature review confirms that a sense of belonging and connection to the institution is critical for students to persist towards their degrees. This research supports this notion and finds that a sense of belonging and connection to the institution for students on academic probation was critical for them to clear academic probation. However, this research was limited to Hispanic, underprepared math students at a four-year Hispanic Serving Institution. Additional research should be conducted to broaden the understanding of how to help students clear academic probation. Suggested research should include:

1. A larger study on Hispanic underprepared students who cleared academic probation. Because the number of participants in this study was small, future research should include a larger study on Hispanic underprepared math students at UTEP who cleared academic probation to see if similar results are found.

2. A study of the general population at UTEP on students who cleared academic probation to determine what strategies worked for them and if a sense of belonging was critical to their success.

3. A longitudinal study to track the successful outcomes and persistence of students placed on academic probation.

4. A study to determine if consistent and frequent communication during the student's first semester regarding grades, grade point average, academic standing, academic probation, and suspension reduces the number of students on academic probation.

5. A study to determine the usefulness and effectiveness of an early alert system at a Hispanic Serving Institution in preventing students from getting on academic probation.

6. A study to compare the impact of mandatory and optional support interventions on the persistence of students on academic probation.

7. A study to compare the impact of sense of belonging for students on academic probation at Hispanic Serving Institutes, Historically Black Colleges and Universities, and predominantly white institutions.

SUMMARY

The National Center for Education Statistics 2018 data shows that the six-year graduation rate for students enrolled in 2011 at four-year public institutions was 60.4% (NCES, 2018d). When students were enrolled at open admissions institutions, the graduation rate plummeted to 30.7%. Furthermore, when the students at open admission institutions were Hispanic, the six-year graduation rate fell to 25.3% (NCES, 2019). Gaining insight as to why Hispanic students do not persist is a critical aspect of improving graduation rates. As such, student retention has been studied extensively to help students persist towards their degrees. Overwhelmingly, research has shown that involvement positively impacts retention and persistence, allowing more students to complete their degrees and institutions to increase the number of students who graduate (Astin, 1977, 1984; Spady, 1970; Tinto, 1993, 2017a;). This research supports this notion and provides evidence on the importance of involvement and a sense of belonging to students who cleared academic probation.

The knowledge gained from this research augments the body of evidence supporting Rendon's Validation Theory (Rendon, 1994). Students in this study were able to raise their GPA because they felt validated. They came to believe in themselves and see themselves as valued members of the community. While this validation came from multiple people and in many forms, it was integral to turning their academics around. Overwhelmingly, when faculty and staff embrace engagement activities and recognize students' strengths as a regular part of their work, students felt validated and as valued members of the community.

For underprepared Hispanic students who are on academic probation, persistence is a challenging issue. Finding the place on campus where students feel valued, supported, and encouraged is vital to overcoming academic probation and persisting to degree completion. The researcher believes that how an institution implements policy and programs makes a difference

in a student's ability to clear academic probation. If institutions focus on helping students overcome barriers and develop programs specifically for Hispanic students, retention, and persistence rise. It is only then that the six-year graduation rate at Hispanic Serving open-access institutions can be positively impacted. More importantly, the American dream will remain intact for Hispanic students, and the rising completion rates will help meet the nation's economy and workforce demands.

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APPENDIX A: IRB APPLICATION FOR REVIEW

Date: January 15, 2020

To: Susan DeCamillis, Cynthia Denise Lujan

From: Gregory Wellman, R.Ph, Ph.D, IRB Chair

Re: IRB Application for Review

A reliance agreement has been put in place between the Ferris State University IRB and the University of Texas at El Paso IRB which governs this study; **Ferris State IRB is relying upon the approval determination of University of Texas at El Paso IRB which approved this project under limited review on December 17, 2019 and granted it an expiration date of December 16, 2021** . It is your responsibility to ensure and inform the FSU IRB that all necessary institutional permissions are obtained from University of Texas at El Paso IRB and that all policies are met prior to beginning the project. Approval applies only to the activities described in the protocol submission; should revisions need to be made, all materials must be approved by University of Texas at El Paso IRB prior to initiation and submitted to Ferris IRB for our records. In addition, each IRB must be made aware of any serious and unexpected and/or unanticipated adverse events as well as complaints and non-compliance issues.

As mandated by Title 45 Code of Federal Regulations, Part 46 (45 CFR 46) you are required to submit an annual status report during the life of the research project and a Final Report Form upon study completion. Thank you for your compliance with these guidelines and best wishes for a successful research endeavor.
Regards,

Gregory Wellman, R.Ph, Ph.D, IRB Chair
Ferris State University Institutional Review Board

APPENDIX B: IRB APPROVAL LETTER

Institutional Review Board

Office of the Vice President for Research and Sponsored Projects
The University of Texas at El Paso IRB
FWA No: 00001224
El Paso, Texas 79968-0587
P: 915-747-7693 E: irb.orsp@utep.edu

Date:	December 17, 2019
To:	Denise Lujan, M.Ed
From:	University of Texas at El Paso IRB
Study Title:	[1480339-1] An Examination of how Underprepared Developmental Math Students Overcame Academic Probation at a Hispanic Serving Institute
IRB Reference #:	College of Education - Developmental Math
Submission Type:	New Project
Action:	APPROVED
Review Type:	Limited Review
Approval Date:	December 17, 2019
Expiration Date:	December 16, 2021

The University of Texas at El Paso IRB has approved your submission. This approval is based on the appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This study has received Limited Review based on the applicable federal regulation.

Based on the risks, this project requires biennial verification by this office on an biennial basis. Please use the appropriate renewal forms for this procedure. The renewal request application must be submitted, reviewed and approved, before the expiration date.

This approval does not replace any departmental or other approvals that may be required. Other institutional clearances and approvals may be required. Accordingly, the project should not begin until all required approvals have been obtained.

Please note that you must conduct your study exactly as it was approved by the IRB. Any revision to previously approved materials must be approved by this office prior to initiation, except when necessary to eliminate apparent immediate hazards to the subject.

All serious and unexpected adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

Please report all Non-Compliance issues or Complaints regarding this study to this office.

Remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

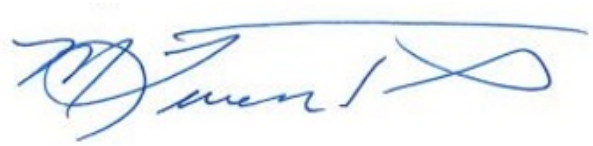
Upon completion of the research study, a Closure Report must be submitted the IRB office.

You should retain a copy of this letter and any associated approved study documents for your records.

All research records must be retained for a minimum of three years after termination of the project. The IRB may review or audit your project at random or for cause. In accordance with federal regulation (45CFR46.113), the board may suspend or terminate your project if your project has not been conducted as approved or if other difficulties are detected.

If you have any questions, please contact the IRB Office at irb.orsp@utep.edu or Christina Ramirez at (915) 747-7693 or by email at cramirez22@utep.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,



Dr. Lorraine Torres, Ed.D, MT(ASCP)
IRB Chair

APPENDIX C: EMAIL SURVEY

EMAIL SURVEY

Participants: All students enrolled in Intermediate Algebra during the spring 2016, 2017, and 2018.

Target Date: January

Purpose of Survey:

1. To create a profile of students who were enrolled in Intermediate Algebra during the spring 2016, 2017, and 2018.
2. To use as the basis for identifying students who have been on academic probation to invite for an interview to learn about their experiences.

Informed Consent

The researcher requests your consent for participation in a study to collect social and academic demographic information. This consent form asks you to allow the researcher to record your survey responses and to use your comments to enhance understanding of the topic. Participation in this study is completely voluntary and all information regarding your participation will remain anonymous. If you decide not to participate there will not be any negative consequences. Please be aware that if you decide to participate, you may stop participating at any time and you may decide not to answer any specific question.

The researcher will maintain the confidentiality of your records and data by keeping them in a secured and locked facility with access given only to the researcher and by destroying all records in three years. Records of your participation in this research study will be remain completely anonymous. Your identity will not be revealed on any report, publication, or at scientific meetings. Personal information will be removed, and pseudonyms will be used for each participant.

By submitting this form you are indicating that you have read the description of the study, are over the age of 18, and that you agree to the terms as described.

If you have any questions, or would like a copy of this consent letter, please contact me at cdlujan@utep.edu.

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Thank you in advance for your participation!

Denise Lujan

Questions:

General Questions

Question	Type of Question	Example
I have read and understand the purpose of the study. By consenting to be in the study I know that I will be answering social and academic demographics-related questions. I also know that I will be asked if I ever have been on academic probation, and may possibly be contacted to take part in a voluntary interview to discuss my experiences.	Select one	Yes or no
I understand that I can withdraw from this study at any time, without penalty or consequences	Select one	Yes or no
I agree to take part in the study by completing the survey	Select one	Yes or no
Country of Nationality	Open Response	U.S., Mexico
Gender	Select One	Male. Female, prefer not to identify, other
Age	Select One - Ranges	18-20, 21-25, 26-30, 31-35, 36-40, over 40
High School	Open Response	Americas
Family Income	Select one – Ranges	<$15,000, 16,000 – 25,000, 26,000-50,000, 51,000 – 75,000, 76,000 – 100,000, 101,000 – 125,000, 126,000 – 150,000, 151,000 – 200,000, 200,000+
Do you receive Financial Aid?	Select all that apply	Scholarship, Pell Grant, Work-Study, Student Loans
What is your father's highest educational level completed?	Select one	Less than high school, some high school, high school graduate, some college, college degree, graduate degree
What is your mothers highest educational level completed?	Select one	Less than high school, some high school, high school graduate, some college, college degree, graduate degree
Are you the first in your family to attend college?	Select one	Yes or no
What is the primary language spoken in your home?	Select one	Spanish, English, other

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What is your classification?	Select one	Freshman, sophomore, Junior, Senior
If you work, how many hours a week do you work?	Select one - Ranges	0-5, 6-10, 11-15, 16-20, 21-25, 26-30, 31-35, 36-40, +40, I do not work.
Were on academic probation during the spring semester of 2016, 2017, or 2018?	Select one	Yes or no. A no answer ends the survey. A yes answer takes them to additional questions.
Are you currently on academic probation?	Select one	Yes or no
How did you learn you were on academic probation?	Select one	An academic counselor or advisor told me, I received an email, I received a letter in the mail, an instructor told me, I saw my status on Goldmine, other
Have you exited academic probation?	Select one	Yes or no
Did you meet with an Academic Advisor while on academic probation?	Select one	Yes or no
How many times did you meet with your academic advisor?	Select one	1, 2, 3, or 4+
Are you an athlete?	Select one	Yes or no
Are you an international student?	Select one	Yes or no
Would you be willing to participate in an interview?	Select one	Yes or no If yes, answer the following questions. If no, survey ends.
Phone number	Open response	915-xxx-xxxx
ID	Open response	800xxxxxx
Secondary email address	Open response	

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APPENDIX D: INTERVIEW QUESTIONS

Interview Questions

Erazo, Y. P. (2017). *Persisting past probation: An exploration of the experiences and perceptions of community college students on academic probation. An interpretative phenomenological analysis* (Doctoral dissertation). Retrieved from ProQuest. (ProQuest number 10681065)

1. Can you describe your experience of failing a course or courses?
   Prompts:
   a. What were your first thoughts/reactions?
   b. Did you know what the consequences would be?
   c. How did you find out about failing a course(s)?
   d. How did failing a course impact your major?

2. What did being placed on academic probation mean to you?
   Prompts:
   a. What was your reaction?
   b. Did you understand what it meant?
   c. Did you understand the consequences of being on academic probation?
   d. Did you understand the impact to financial aid?
   e. What were the circumstances that placed you on academic probation?
   f. Were they academic, professional (work-related), or personal?

3. What was your family's reaction to your academic probation?
   Prompts:
   a. How did you explain the circumstances of your probation?
   b. Did your family initially support you during your probation?
   c. Did they understand academic probation and its consequences meant?

4. How do you personally define success?
   Prompts:
   a. Is it more about good academics or your level of satisfaction or happiness with regard to your efforts?
   b. What makes you a successful student now?

5. At what point during your academic probation did you decide to make the changes towards success?
   Prompts:
   a. What initiated the discussion?
   b. Who impacted your decision to make the changes?

6. Do you participate on campus?
   Prompts:
   a. In what capacity?
   b. Are you an honors student or part of an honor society?

c. Are you a part of a student organization?

7. What was the most important resources that contributed to you overcoming probation?
   Prompts:
   a. Did you attend a study group or tutoring?
   b. Did you seek out tutoring?
   c. Did you speak to your professor?
   d. Did you speak with your academic advisor?

8. Who provided you support while you navigated academic probation?
   Prompts:
   a. Was there someone on campus with whom you could seek advice?
   b. Were there other students with whom you could talk to about your academic probation?
   c. Did a family member encourage you to stick with it?

9. Do you feel like you belong at UTEP?
   Prompts:
   a. Who on campus made you feel like you belong?
   b. Who are your friends?
   c. Who treated you as if you were important to them? This school?
   d. What are some things that make you feel important? Unimportant?
   e. Do you feel like you are accepted at UTEP?

10. Can you tell me about some of your positive experiences while on academic probation?
    Prompts:
    a. Did you build any academic, personal, or professional relationships?
    b. Did you learn something new?
    c. Did you feel a sense of pride when you passed your classes?

11. If you could change something about your academic probation experience, what would it be?
    Prompts:
    a. What resources or support would you have sought?
    b. What information would you have like to have known prior to being placed on academic probation?
       i. Was there an appeal process?
       ii. Could you have appealed the academic probation decision?
       iii. Did you receive fair warning the semester prior to being placed on academic probation?

12. What advice/suggestions would you offer to a student on academic probation today?
    Prompts:
    a. What resources would you adamantly suggest the student use?
    b. Who would you send them to regarding how to successfully persist past probation?