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# Effects of the Imposter Phenomenon on First-Generation Students' Academic and Co-curricular Engagement

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University in partial fulfillment of the requirements for the degree of

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Dr. Roger "Mitch" Nasser, Dissertation Chair — Date

Dr. Tammy Moore, Committee Member — 04-14-2023 — Date

Dr. Aaron Hughey, Committee Member — 4-14-23 — Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

Full Legal Name: Ethan Sykes

Signature:  Date: 4/14/2023

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## Abstract

First-generation college students experience many barriers transitioning to college, such as impostorism. Administrators must understand how the imposter phenomenon impacts student engagement, to increase retention. The researcher utilized a mixed-methods approach to explore the prevalence of the imposter phenomenon among community college and private university students. Furthermore, the study examined how impostorism manifested in academic and co-curricular settings. The survey sample consisted of 216 total participants, with 91 who identified as first-generation students. Eight students participated in the interviews. For the purpose of the study, first-generation students were those whose parents did not complete a bachelor's degree. The researcher utilized three scales to examine imposterism and student engagement: Clance Imposter Phenomenon Scale, Engagement Learning Index, and the Co-Curricular Involvement Experience Index. Descriptive and inferential statistics provided insight to the problem. Additionally, the researcher performed a thematic analysis from the interviews to enhance the quantitative data and understand the lived experiences of first-generation students who experience frequent to intense impostor feelings. Findings revealed that overall, there was not a difference between first-generation and continuing-generation students. In fact, most participants experienced frequent to intense feelings of imposterism. However, results indicated slight differences between first-generation students across institution type. First-generation freshmen experienced varying levels of impostorism at the two different institutions. The study also depicted a significant difference among first-generation freshmen across institutions in educational meaningful processing. Co-curricular experiences revealed a difference between first-generation

freshmen quality of involvement, while first-generation sophomores experienced a difference in quantity of involvement across institutions. Qualitative results discovered many characteristics first-generation students assume as imposters. Several barriers included: fear of failure, the comparison of oneself to others, fear of negative evaluation from others, and the lack of a sense of belonging. These barriers negatively influenced the participant's academic and co-curricular engagement. Several recommendations emerged for administrators, staff, faculty, and students. The importance of increasing awareness, providing training programs, and increasing overall support for impostorism can enhance persistence for students.

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# Chapter One: Introduction

Student recruitment and retention in higher education have long been the foundations of colleges across the globe. Every operation at a college relies on the number of students who attend, which contributes to the bottom line. First-generation students, specifically, are vulnerable to not persisting to graduation. According to RTI International (2019), only 56% of first-generation college students earned a postsecondary credential, compared to 40% of continuing-generation students. Financial strain, mental health, a sense of belonging, and lack of resources contribute to this academic persistence. Furthermore, the imposter phenomenon [IP] impacts each educational persistence factor, as students feel they do not belong in college.

## Definition of Retention

Retention has had multiple definitions over the years. The most common is the continued enrollment of students from their first year to the second year (Bean, 1980, 1982; Cotton et al., 2017; Farrell, 2009; Ishler & Upcraft, 2005; Spady, 1970; Tinto, 1975, 1993). Argumentatively, retention does not occur until students complete their postsecondary program. Student persistence is another term used, better related to student completion than continued enrollment. Persistence is the continuous enrollment from year two until graduation (Belch et al., 2001; Chambers & Paull, 2008; Kerby, 2015). Retention between years one and two are especially significant because that is when the highest attrition levels occur (Achinewhu-Nworgu, 2017; Blue, 2018; Tinto, 1975, 1993). Regardless of the definition, retention is critical to institutional achievement.

To understand retention, an awareness of why students attend college is vital. Students attend higher education for a variety of reasons. First, four-year college

graduates earn 66% more than those with a bachelor's degree (National Center for Education Statistics [NCES], n.d.). The financial consideration of attending college is alluring for many. College is viewed by others as a gateway to a higher socioeconomic status, especially for people in generational poverty. An employee with a bachelor's degree may earn close to one million more than an employee without postsecondary education (NCES, n.d.).

As for financial benefits, most jobs require postsecondary training or education. According to the U.S. Department of Education, two-thirds of jobs need workers to have a college education or training in their field (NCES, n.d.). Several available careers do not require postsecondary education, but most higher-level positions require a degree. People without these educational backgrounds can become limited to lower-to-middle management positions.

Connections to opportunities are another reason people attend college. Aside from the educational component, there are a lot of social experiences that provide further opportunities. For example, students who join an organization can have strong connections with alums, which can help them get a job. Numerous resources on campus can support the student, including counseling, career planning, multicultural centers, and disability services. These opportunities are critical to student success, assisting them during and after college (Grim et al., 2021).

**Factors Influencing Retention**

Several factors influence retention. Stewart et al. (2015) researched the persistence of first-year students in a large public institution. The sample included 3,213 first-time freshmen enrolled from Fall 2006 to Fall 2013. The majority of students

persisted (73.2%), while nonremedial students did not (60.5%) (Stewart et al., 2015). Additionally, high school GPA and first-semester GPA influenced retention exponentially.

Data from the study supports the thought that students must be academically ready for college to persist. Underprepared students may not reach out for support and give up trying to succeed, including financial readiness. According to Stewart et al. (2015), family income had no significance on retention, but receiving financial aid had a positive effect. Students who acquire money from financial assistance are more motivated to meet grade requirements and may not have to work while enrolled in college (Stewart et al., 2015).

The academic rigor of a student's high school curriculum is another factor affecting academic preparedness (Wyatt et al., 2012). Wyatt et al. (2012) created an academic rigor index from students' responses to the SAT questionnaire. There were several stages in the process. First, the project analyzed connections between high school coursework and first-year college GPA. Second, data from the SAT samples were added with enrollment, first-year GPA, retention, and SAT performance. The research showed that rigorously challenged high school students had increased college GPAs, persisted to their second year, and attended a four-year institution (Wyatt et al., 2012).

Student demographics are another factor manipulating retention. Women frequently earn more degrees than men. The data suggested a 15% increase for women and over a 9% increase for men by 2024 (Barbera et al., 2020). Gender movement, change in gender norms, and strong return on investment for women who earn a degree contributed to this increase (Barbera et al., 2020). Current initiatives indicate a strong

push for women in the STEM fields. These women are less likely to drop out because they are committed to the institution.

First-generation college students are another population subset. First-generation college students represented 56% of the student population in the 2015-2016 academic year (RTI International, 2019). With more than half of students identifying as the first in their families to attend college, the need for resources to support these students is growing. Only 20% of first-generation students graduated with a bachelor's degree after six years of postsecondary enrollment, compared to 49% of continuing generations (RTI International, 2019).

**Theoretical Framework**

Several theoretical frameworks apply to student involvement concerning student success (Astin, 1999; Tinto, 1975). Despite many theorists contributing to first-generation research, Spady's (1970, 1971) Undergraduate Dropout Process Model, Astin's (1999) Theory of Involvement, and Tinto's (1975) Student Integration Model directly focus on persistence. Each theory critically challenges higher education administrators to assess retention and involvement.

Tinto's (1975, 1993) Institutional Departure Model is one of the most significant retention theories. Like Spady's (1970, 1971) theory, Tinto (1975, 1993) focused heavily on social integration as a factor in student retention. According to Tinto (1975, 1993), first-year students need a positive social transition to be successful. The transition from high school to college can be severely challenging. New values, priorities, or behaviors can force students out of their comfort zone.

The final theory presented is Alexander Astin's (1999) Theory of Involvement. Astin's framework is critical in comprehending student involvement and retention. According to Astin (1999), students engaged in co-curricular experiences are more likely to commit to the institution. The core concepts of this theoretical framework are inputs (demographics, background, previous experiences), environment (academic and co-curricular experiences), and outcomes (student characteristics, knowledge attitudes, and values after a student graduates from college) (Astin, 1999).

**Statement of the Problem**

As demonstrated, the research identifies strong correlations between student engagement and retention (Chen et al., 2008; Conner, 2011; Hattie & Anderman, 2013). Students engaged in their academic and co-curricular experiences are more likely to be successful. However, multiple barriers can prevent students from engaging in their college experience. First-generation college students are especially at risk. For instance, first-generation students at a four-year institution were twice as likely to drop out during their first year or not return for a second year than continuing-generation students (Cataldi et al., 2018).

First-generation college students represented 56% of the student population in the 2015-2016 academic year (RTI International, 2019). With more than half of students identifying as the first in their families to attend college, the need for resources to support these students is growing. Several factors impact first-generation success, including academic preparedness, student demographics, external support, motivation, and the effects of the imposter phenomenon.

The imposter phenomenon, first recognized in 1978 by Clance and Imes, is the feeling of success based on luck instead of skills or talent (Matthew & Clance, 1985). Numerous studies conducted on first-generation students and the imposter phenomenon focus on resilience (Ayesiga, 2021), perfectionism (Holden et al., 2021), and unrepresented students (Le, 2019). The literature has not addressed comparing first-generation students experiencing the imposter phenomenon among student classification and institution types. Furthermore, there has not been an analysis of how the imposter phenomenon impacts first-generation student academic or co-curricular involvement. Understanding how the imposter phenomenon affects student engagement can support retention efforts in higher education.

**Purpose of the Study**

The purpose of the proposed study was to complete a mixed-method comparative analysis of first-generation students and the effects of the imposter phenomenon on academic and co-curricular engagement. There were multiple facets to this study. Foremost, first-generation students were compared across classifications with continuing-generation students to determine variances. Further research explored the impact of the imposter phenomenon on engagement. Finally, the scope of the study included a private four-year university and a public two-year community college in a mid-sized town.

The investigator determined if the first-generation student status yielded higher levels of the imposter phenomenon. Several studies highlighted the effects of the imposter phenomenon among first-generation students and continuing-generation students (Canning et al., 2018; Holden et al., 2021; Peteet et al., 2015). Holden et al. (2021) reported similar imposter phenomenon levels between first-generation and

continuing-generation students, stating that more research is needed to further understand the relationship between the two variables. However, the imposter phenomenon is strongly associated with stress in first-generation students (Holden et al., 2021). The study expanded the current literature and further identified differences between first-generation and continuing-generation students regarding IP. In addition, the researcher included student classification and institution types in the analysis. Limited research examined the imposter phenomenon across institutions (Jenkins, 2021) and among student classification (Fahira & Hayat, 2021). The researcher postulated the following: first-generation students experience the imposter phenomenon more than continuing-generation students, there is a difference between imposter phenomenon experiences among freshmen, sophomores, juniors, and seniors (with freshmen and sophomores experiencing IP more), and there is a difference in the imposter phenomenon between institutional types (with the most prominent institution having more students experience IP).

The second focus was to determine if higher levels of the imposter phenomenon correlate with lower levels of engagement. Research demonstrated a positive correlation between student engagement and retention (Astin, 1999; Spady, 1970; Tinto, 1975). Examining the imposter phenomenon and student engagement provided context and supported the rationale that more intervention programs are needed to retain first-generation college students (Engle, 2007). There is limited research on how the imposter phenomenon impacts engagement. Still, data has shown that students with interventions have higher grades, earn more credits, and have higher retention and graduation rates than other first-generation college students (Engle, 2007). The final component of the

study was to analyze why first-generation students experience the imposter phenomenon and how it personally affects their academic and co-curricular engagement. The qualitative portion supplied experiential knowledge, enriching the quantitative data. The goal was for the quantitative data to provide correlations, while the qualitative data used the correlations to tell a story.

**Research Questions and Hypotheses**

The following research questions and hypotheses guided the study:

1. How do first-generation students experience the imposter phenomenon?
2. What resources are needed to support first-generation college students experiencing the imposter phenomenon?
3. How do students feel the imposter phenomenon impacts academic engagement?
4. How do students feel the imposter phenomenon impacts co-curricular engagement?

$H_{1;}$ First-generation students experience the imposter phenomenon more than continuing-generation students.

$H_{2;}$ There is a difference in the imposter phenomenon experience among first-generation Freshmen, Sophomores, Juniors, or Seniors.

$H_{3;}$ There is a difference in the imposter phenomenon experience among first-generation students at a community college or private university.

$H_{3a;}$ There is a difference in the imposter phenomenon experience among first-generation freshmen students at a community college or private university.

$H_{3b;}$ There is a difference in the imposter phenomenon experience among first-generation sophomore students at a community college or private university.

*$H_{4;}$* The imposter phenomenon influences the academic engagement of first-generation college students?

*$H_{4a;}$* There is a difference in academic engagement among first-generation freshmen students at a community college or private university.

*$H_{4b;}$* There is a difference in academic engagement among first-generation sophomore students at a community college or private university.

*$H_{5;}$* The imposter phenomenon influences the co-curricular engagement of first-generation college students?

*$H_{5a;}$* There is a difference in co-curricular engagement among first-generation freshmen students at a community college or private university.

*$H_{5b;}$* There is a difference in co-curricular among first-generation sophomore students at a community college or private university.

**Significance of the Study**

Research has provided essential data on the imposter phenomenon (Ayesiga, 2021; Hutchins & Rainbolt, 2017; Jenkins, 2021; Muldrow, 2016). However, there is currently an existing gap in the correlation between students experiencing the imposter phenomenon and their engagement in the college experience. Through analysis of the participant responses, this study further explored this topic and provided insight into how first-generation students navigate this phenomenon.

The imposter phenomenon research contains multiple variables, such as gender, students of color (Muldrow, 2016), first-generation status (Ayesiga, 2021), public v. community college classification (Jenkins, 2021), and faculty (Hutchins & Rainbolt, 2017). This study differed by researching three classifications (public, private, and

community college) and provided academic and co-curricular engagement context. Findings found in the study will guide higher education staff, faculty, administrators, and policymakers in understanding first-generation student experiences with the imposter phenomenon.

This study is critical in comprehending first-generation success and contributes to the retention discussion. Comprehensive research demonstrates a positive correlation between student engagement and retention. Since the 1960s, various researchers, such as Astin (1975), Tinto (1975), Spady (1970), and Wolf-Wendel et al. (2009) have studied engagement. According to Wolf-Wendel et al. (2009), student engagement is the amount of effort a student interacts with their college experience and the effort made by the institution to engage the student:

> The concept of student engagement represents two key components. The first is the amount of time and effort students put into their studies and other activities that lead to the experiences and outcomes that constitute student success. The second is how higher education institutions allocate their human and other resources and organize learning opportunities and services to encourage students to participate in and benefit from such activities. (pp. 412-3)

This breakdown demonstrates the strong connection between engagement and retention. It also reinforces the validity of this study. Although the student must make the choices to be engaged, understanding the barriers associated with the imposter phenomenon will help administrators allocate appropriate resources to encourage participation.

The study also highlighted differences in student classification, displaying the need for increased vigorous retention efforts. Higher education administrators must make every effort to retain students. Only 64% of students who sought a bachelor's degree in the fall of 2014 completed the degree within six years (NCES, 2022). Knowing how to better engage with our at-risk students can increase the number of students completing a degree within six years.

**Definition of Key Terms**

For this study, the following terms are defined below.

**Academic Engagement:** Academic Engagement "emphasizes the degree of willing student compliance with organizational and subject rules, values, and processes. [In addition to] students' active participation and emotional commitment to their learning" (Casuso-Holgado et al., 2013, para. 7).

**Co-Curricular Engagement:** "Activities such as working on campus, living on campus, engaging with peers, being a member of clubs, and socializing with faculty members are the types of [co-curricular] involvement" (Pascarella & Terenzini, 2005; Wolf-Wendel et al., 2009, p. 411).

**First-Generation College Student:** The Federal Government defines first-generation college student (FGCS) as:

a. an individual both of whose parents did not complete a baccalaureate degree, or
b. in the case of any individual who regularly resided with and received support from only one parent, an individual whose only such parent did not complete a baccalaureate degree (Higher Education Act, 1965, p. 3).

**Imposter Phenomenon:** "The term impostor phenomenon is used to designate an internal experience of intellectual phonies" (Clance & Imes, 1978, para. 1).

## Limitations

The study presented several limitations. The research involved continuing-generation students at the start of the study, but first-generation students took the primary focus. A large amount of data about continuing-generation students could have provided further context to the impostor phenomenon. Furthermore, first-generation students were the only group included in the qualitative portion of the study. An investigation of continuing-generation students' lived experiences with the imposter phenomenon could have provided more validity and highlighted themes not seen among first-generation college students.

The study excluded demographics in the data collection process other than first-generation student status. Although prior research demonstrated connections between race (Peteet et al., 2015) and gender (Patzak et al., 2017) with the imposter phenomenon, this study failed to explore correlations between IP, demographics, and student engagement. Moreover, the discussion analyzed only first-year students and sophomores across institution types. Results could have identified critical themes among these characteristics, further supporting targeted intervention strategies. The researcher excluded this data, due to the limited information presented in the literature about IP and student engagement.

Data collection was a limitation of this study. The study originally had three institutions: a medium private university, a large public university, and a large community college. However, the large public university did not participate, due to the

oversaturation of data collection. The small private university and large community college surveyed students via email sent to the entire student population in mid-September and mid-October. The data collection occurring at two separate times caused a few issues. First, the study aimed to capture the imposter phenomenon experience. Students may have varying IP experiences from September to October, causing variations in institutional data. Second, the participant amount could vary as students become more involved in classes and extracurricular programs. The number of students should be proportionate across each school to accurately represent the imposter phenomenon.

**Summary**

Retaining students must be the number one priority for higher education administrators. There have been many strategies created to combat student attrition. Veenstra (2009) emphasized intervention through increased student support services. Students face problems and need people to help direct them to solutions. First-generation students affected by the imposter phenomenon especially need support.

Although retention is multifaceted and complicated, improvements to subcategories are necessary. Student involvement, first-generation student success, and the imposter phenomenon are fundamental to retention. This study looked at levels of impostorism, and the lived experiences among first-generation college students, capturing feelings and perceptions of the academic and co-curricular experience. Limited research exists to fully excavate the impact of the imposter phenomenon experience on student engagement. These topics are further explored and analyzed in the next chapter.

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## Chapter Two: Review of Literature

This study has five components: first-generation college students' imposter phenomenon experiences, academic engagement, co-curricular involvement, managing the imposter phenomenon, and retention. Each has been thoroughly researched (including first-generation students and the imposter phenomenon), but there needs to be more research containing all five. The analysis must identify correlations among these factors and lead to understanding first-generation students, ultimately improving retention.

The literature review addresses challenges associated with the first-generation student status, the effects of the imposter phenomenon on various student populations, and positive outcomes from high student engagement. The literature selected in this review highlights critical information supporting the study. It is essential to recognize that each attribute has other factors of influence. For example, first-generation students may have vast differences in their college experiences, based on race, socioeconomic background, and religion. Identifying these nuances will help the audience comprehend the scope of the research.

### Challenges of First-Generation Students

First-generation [FGCS] students experience many challenges as they transition to college (Adelman, 2006; Attewell et al., 2011; Housel, 2019; Kopp & Shaw, 2016). Learning the academic and co-curricular expectations can be a steep climb for these students as they navigate how to utilize the little social capital provided (Lareau & Horvat, 1999; Pascarella et al., 2004). These students juggle financial needs, academic preparedness, mental health, and intersecting identities. Administrators must be cognizant

of these challenges to support and encourage first-generation students to persist to graduation.

### *Social Capital*

First-generation students are missing crucial guidance on college knowledge and processes as the first in their families to attend college. This lack of information is attributed to first-generation students' parents not understanding how the high school curriculum relates to college readiness (Gamez-Vargas & Oliva, 2013). Moreover, many of these students come from low-income and rural areas (Hudley et al., 2009). Arriving from low-income and rural areas means that most of their environments (including their high schools and local communities) may also be first-generation. These first-generation students lack the support structure from friends, family, and community to pave the way for their college entry and success.

As a result, these first-generation students enter the college environment alone, without vital networking skills and essential college knowledge, especially compared to their non-FGCS peers (Pascarella et al., 2004). This lack of social capital means not knowing what to ask, whom to ask, or how to ask for help. Several resources could be available at a university, but if the student fails to have relationships with faculty and staff, they will not receive the vital support needed for retention (Jarecke, 2020).

Even if these students know whom to ask, many first-generation students come from cultures/generations that misinterpret asking for help as a sign of weakness (Jenkins et al., 2009). First-generation students also misunderstand asking for help as a sign that they do not belong. Knowing this - among many other first-generation characteristics and

backgrounds - might help us understand how to best provide professional development for faculty and staff who work closely with this population.

Social Capital is like depositing relationships in the bank," and first-generation students arrive at college with limited funds. These students struggle to make "payments toward their experiences without those relationships. College staff and faculty need to help students fill their banks with relationships. Moschetti and Hudley (2015) stated, "By developing social networks, students can often access valuable information, guidance, and emotional support that encourages a perception that the social, physical, and academic environments are negotiable and enables students to manage their new surroundings cognitively" (p. 237). Students who develop college networks become more connected to college life and less likely to disconnect (Astin, 1999; Pascarella & Terenzini, 2004). Ultimately, acquiring social capital positively impacts a student's overall academic performance, educational aspirations, and persistence at the postsecondary institution (Lareau & Horvat, 1999; Pascarella et al., 2005). A social capital framework posits that differences in the quality and number of social networks among college students relate directly to differences in engagement and persistence at the institution.

### *Intersecting Marginalities Impacting the First-Generation Experience*

Students have multiple identities influencing their perspective as first-generation students. Race, class, religion, sexuality, and mental health contribute to identity development (Seaton et al., 2014). According to Housel (2019), "Identities not only have a complex relationship with each other but are also differently marginalized and salient across various contexts and times in a student's life" (p. 6).

Housel (2019) stated that conflict can arise with first-generation students when independence and family dependence contradict. First-generation students increase their distance from family as they break away from identities at college, but attempt to preserve relationships when returning home. As a result, this can cause a strain on the newly constructed identity, leading to guilt, frustration, and anxiety (Covarrubias & Fryberg, 2015; Housel, 2019). Does the blame fall on the family for not understanding the need for autonomy, or should the student remember traditions and keep expectations? This is a question to consider as students navigate their college transitions.

A person's race is another construct used by Housel (2019). "An FGCS [first-generation college student] who is also Black and from a lower middle-class economic background may not only have to cope with economic difficulties but also with White supremacy" p. 31). Compounding marginalized identities, such as race and socioeconomic status face higher challenges (Housel, 2019; Lobo et al., 2019; McClain et al., 2016). Students who experience these microaggressions can impact their perceptions of their first-generation student status and lead to further distress as they navigate their experience (Gomez, 2015).

### *Academic Preparedness*

According to research, first-generation students with diverse backgrounds often enter college less academically prepared than those students who are not first-generation (ACT, 2013; Adelman, 2006; Kopp & Shaw, 2016; Schmitt et al. 2009). These first-generation students typically earn fewer advanced placements or credits before college. This same group is more likely to enroll in developmental classes and earn lower grades overall (Cataldi et al., 2018).

First-generation students are less likely to persist and complete their degrees beyond their first semester. Six years after enrollment into college, the completion rates between first-generation and continuing-generation students show discrepancies when compared to each other. Fifty-six percent of first-generation students have completed a credential, compared to the 74% who were not first-generation (Cataldi et al, 2018).

First-generation students face a greater risk of not persisting between school years, as they are more likely to drop out, particularly between their first and second years in school (Radunzel, 2018). This attrition could be especially problematic for community colleges, whose program offerings are primarily two-year. Student support services need to be in place to decrease the dropout rate.

The federal TRIO program created by the Higher Education Act of 1965 is one example of support services benefiting first-generation student success. These programs ease the transition to college with adult education services, instructional assistance, and social integration. Additionally, these programs provide crucial resources outside of education. Students concerned about essential needs will need more time to be able to focus on their academics effectively. The TRIO programs have assisted many students in achieving their dreams.

### *Financial Need*

In addition to being academically underprepared, first-generation students also have more financial stress than continuing-generation students, which can hinder college persistence (Attewell et al., 2011; Pratt et al., 2017; Wilbur & Roscigno, 2016). Financial challenges attributed to dropout include many factors. As mentioned previously, most first-generation students come from lower-income families (Redford & Hoyer, 2017).

These families not only have trouble paying for education because of their status, but are also limited in their knowledge of how to get financial assistance. Some initiatives, such as the FAFSA preparation programs, assist families in understanding financial aid. However, resources depend on school location, as many rural students significantly experience barriers from nonrural peers (Agger et al., 2018; Hutchins et al., 2012; Johnson, 2008; Slocum et al., 2020).

Second, most first-generation students leave college, because they cannot afford to attend (54% vs. 45%; Redford & Hoyer, 2017). These students must take out large loans to support the cost (Furquim et al., 2017). Not knowing how to pay for college can be stressful, but knowing when to limit spending is even greater stress. First-generation students without resources can buy unnecessary things because they are "needed." This spending can accumulate student debt quickly and create financial strain significantly if the student drops from the institution.

Finally, first-generation students must work more than continuing students to combat the growing expense of college (Engle & Tinto, 2008). Students who work more tend not to have as much time for academic and social integration (Engle, 2007; Kuh et al., 2006). As previously stated, academic and social integration heavily influence retention (Tinto, 1975).

### *Sense of Belonging*

In addition to challenges with academics and persistence, first-generation students struggle to connect with their colleges and report lacking a sense of belonging (Longwell-Grice et al., 2016). This lack of connection is often compounded by those attending commuter colleges. Campus and student activities may not be as prevalent as traditional

campuses, furthering a first-generation student's uncertainty about resources, services, and events. Students' chances are strong with earlier intervention (Engle et al., 2006). Providing focused programming that engages students will highlight resources around the campus that may be already available but not always known to first-generation students.

A sense of belonging is an emerging construct in higher education, defined as a need or desire to be connected through informal or formal interactions (Tovar et al., 2015). A student with a stronger sense of belonging is likely to persist toward graduation (Hoffman et al., 2002). Moreover, the research verifies that a sense of belonging predicts intentions to persist, strongly influencing other retention variables (Hausmann et al., 2007). This information is critical for first-generation students regarding concerns about their persistence and retention.

Many additional factors influence belonging on campus, including connections to academic success (Bradbury & Mather, 2009), academic self-efficacy (Freeman et al., 2007), interventions (Hausmann et al., 2007), and social media (Strayhorn, 2012). Out of the literature, positive interactions are particularly significant (Freeman et al., 2007; Hausmann et al., 2007; Strayhorn, 2012). Each of these factors contributes to college student persistence.

Freeman et al. (2007) explored associations between the sense of class belonging and perceptions of academic motivation. The data exhibited that students who felt a sense of belonging to the class displayed higher intrinsic motivation (Freeman et al., 2007). Results suggest these students were more confident in class, allowing them to participate more in discussions and group activities. The overall analysis determined that student sense of belonging in a single class was significant. Still, the most crucial variable in the

sense of belonging is social acceptance by university employees and students (Freeman et al., 2007).

Hausmann et al. (2007) further investigated the sense of belonging by analyzing retention and intervention strategies among African American and White first-year college students. Participants in the study were randomly selected to receive intervention to enhance student belonging. Outcomes indicated that students who received intervention experienced a less rapid decline in their sense of belonging than those who did not (Hausmann et al., 2007). Interestingly, the study found that students who had early positive interactions with peers or faculty displayed a greater sense of belonging. In contrast, academic integration and personal demographics did not appear to influence a sense of belonging (Hausmann et al., 2007). This information correlates with previous research that Freeman et al. conducted in 2007.

### *Mental Health of First-Generation Students*

Several studies attest that mental health affects student retention (Eisenberg, 2016; Kitzrow, 2009; O'Keeffe, 2013; Thomas et al., 2021). Accommodations for students have been on the rise, especially for mental health concerns. This fact is not surprising due to the prevalence of mental health disorders and the impact of the COVID-19 pandemic. According to research, most mental health problems occur during young adulthood. Kessler et al. (2005) observed that by 25 years of age, 75% of people with mental health disorders would display signs which validate the significant changes made in the college transition. Research has also shown anxiety and depression as the leading problems among college students, with around 11.9% suffering from an anxiety disorder and 7% to 9% from depression. Other mental health disorders affecting college students

are post-traumatic stress disorder, social phobias, and panic disorder (Blanco et al., 2008).

Among the challenges associated with first-generation college students, researchers estimate that millions of students would graduate from postsecondary education if not for experiencing severe mental health, including depression and anxiety (Breslan et al., 2008; Kessler et al., 1995). The stress of transitioning to college can be too great without proper resources. Stebleton et al. (2014) collected mental health data in 2014 from 145,150 first-generation students across six sizeable public research institutions. Most students responded to belonging and satisfaction, while a random sample responded to mental health and the use of counseling centers on campus. Several key outcomes were found, providing a better grasp of first-generation student development.

Non-first-generation students significantly reported having lower stress and depression compared to first-generation students (Stebleton et al., 2014). These first-generation students also did not utilize mental health resources on campus because "the location was inconvenient (84.5%), they had never heard of it (80.4%), the hours were inconvenient (77.8%), and they did not have enough time (76.1%)" (Stebleton et al., 2014, para. 30). This relates to the challenges of financial aid, sense of belonging, and academic stress.

**Theoretical Framework**

Although students have a strong pull to attend college, attrition has been an issue since the formation of higher education. Fortunately, many theoretical frameworks developed since the 1970s provide research-based practices for institutions looking to

increase retention efforts (Tinto, 2007; Tudor, 2018; West et al., 2016). The models have been added to, revisited, and revised to meet the current needs of students. Each model includes a four-year institutional design.

### *Spady's Undergraduate Dropout Process Model*

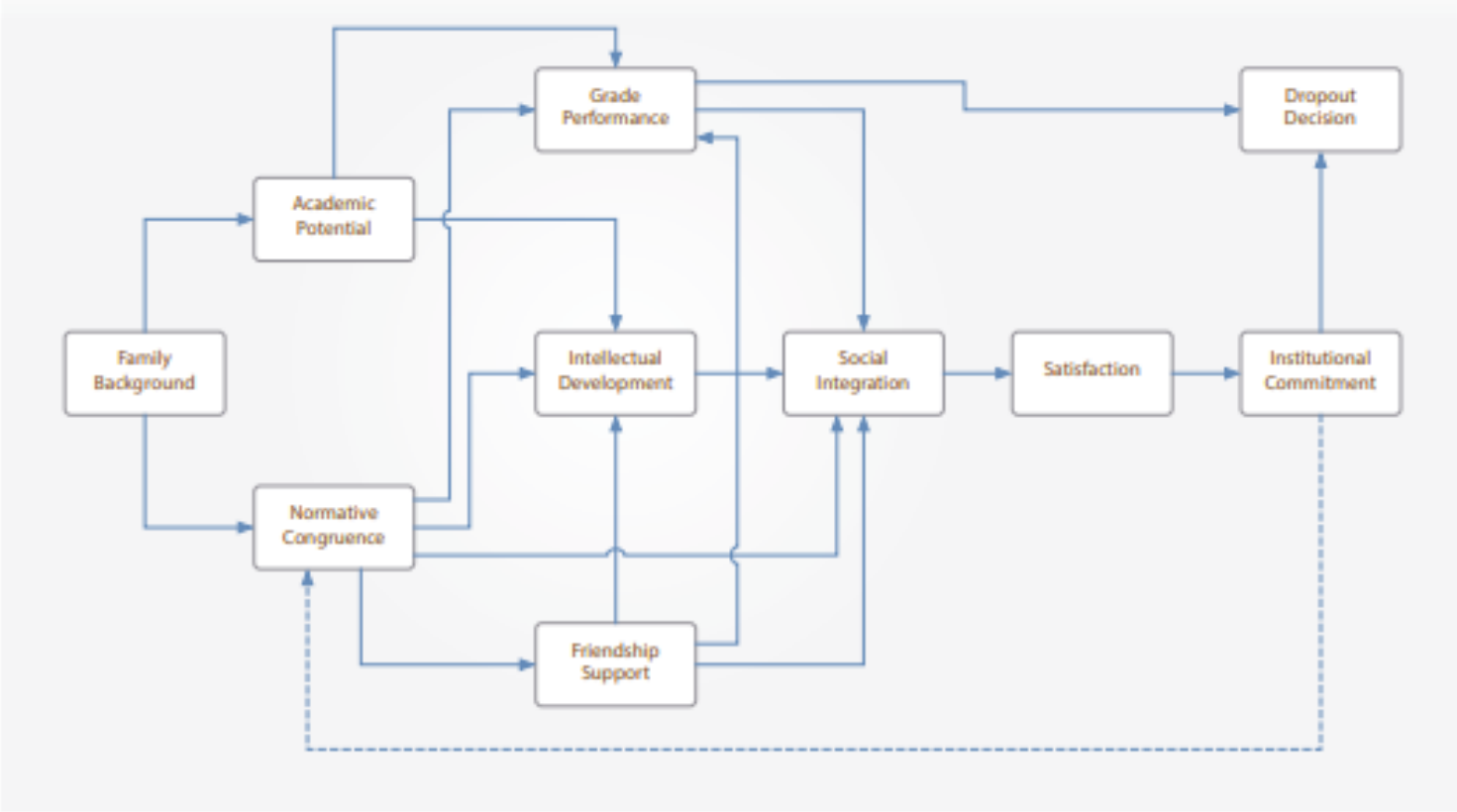
The first framework is Spady's (1970, 1971) Undergraduate Dropout Process Model. Considered the earliest theoretical model, The Undergraduate Dropout Process Model assumes the attrition process is affected by the student-college relationship (Spady 1970, 1971). The student interacts with two institutional systems: academic and social. The educational system influences students through grades, while the social system uses attitudes, interests, and personalities (Spady 1970, 1971).

Through the educational and social systems analysis, Spady (1970) attributed student attrition to four main principles: intellectual development, social integration, satisfaction, and institutional commitment. The central assumption from Spady's (1970, 1971) model is that student satisfaction will rely on social and academic benefits. Additionally, retention requires integration into the college experience with positive academic and social encounters.

Figure 1 illustrates Spady's (1970) Undergraduate Dropout Process Model.

**Figure 1**

*Illustration of Spady's Undergraduate Dropout Process Model (Spady, 1970).*




*Note.* Undergraduate Dropout Process Model (Spady, 1970). Adapted from *Dropouts from higher education: An interdisciplinary review and synthesis* by W. G. Spady, 1970, Interchange, 1, p. 79.

### *Astin's Theory of Involvement*

The second theory relating to retention is Astin's Theory of Involvement (Astin, 1999). Astin (1999) defines student involvement as the utilization of physical and psychological energy that students dedicate to the academic experience. Furthermore, engaged students devote considerable energy to studying, spending time on campus, participating actively in student organizations, and frequently interacting with faculty members and other students (Astin, 1999, p. 518).

To support his theory, Astin (1999) conducted a longitudinal study of college dropouts and found student involvement as a critical indicator of leaving the institution. As depicted in Figure 2, Astin's theory discovered five fundamental principles of student retention:

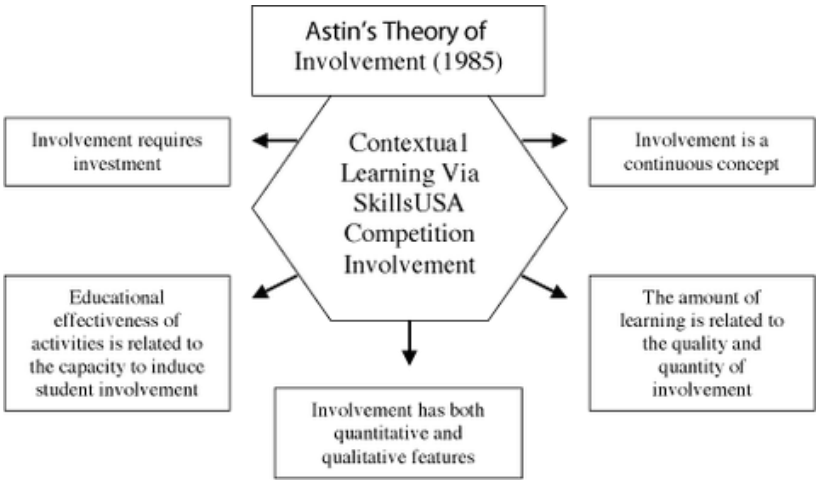
1. Involvement can be generalized (the overall student experience) or specific (such as attending a school event).
2. Involvement transpires through a continual process, not defined to any point in time. Students have varying experiences and invest differently in each object.
3. Involvement is quantitative (how many hours a student spends on homework) and qualitative (the comprehension of the material).
4. Student learning is related to qualitative and quantitative involvement.
5. Any policy or practice's effectiveness is determined by the capacity of that policy or practice to increase student involvement. (Astin, 1999, p. 519)

Additional considerations influence involvement, such as honors programs, athletic involvement, housing, student government, and academics. Astin (1999) encourages

further research to identify different forms of involvement to support the theoretical foundation.

**Figure 2**

*Illustration of Astin's Theory of Involvement (Astin, 1999).*




*Note.* Astin's Theory of Involvement (Astin, 1999). Adapted from "Student Involvement: A Development Theory for Higher Education" by A. Astin, 1999, *Journal of College Student Development 40*(1), pp. 518-529.

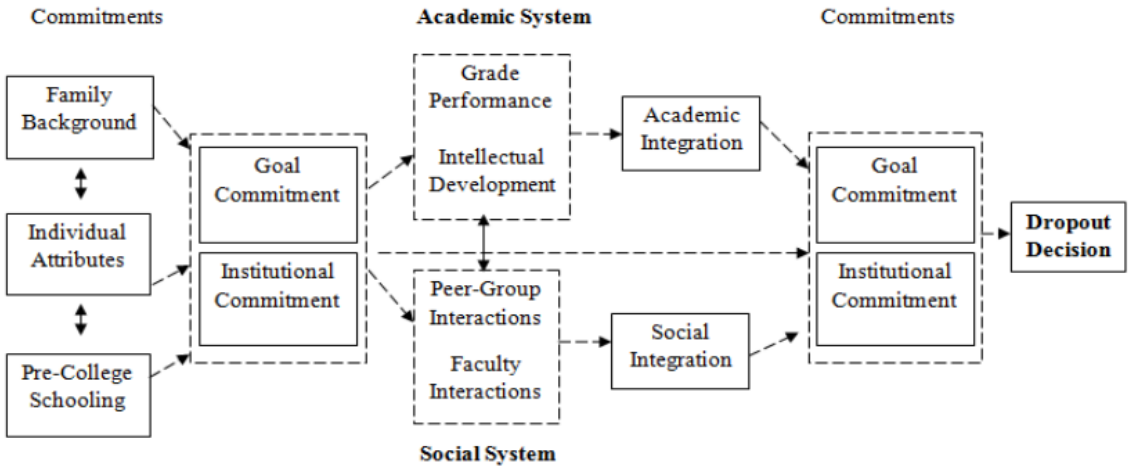
***Tinto's Model of Institutional Departure – College Retention***

Although Astin's (1999) groundbreaking research on access and persistence provides a framework for future researchers, Tinto (1975) is most often cited and associated with student persistence research (as cited in Metz, 2004). Tinto's Student Integration Model identifies student persistence as the integration of student needs into formal (academic performance) and informal (faculty/staff interaction) educational systems and formal (extracurricular activities) and informal (peer-group) interaction systems.

Tinto's (1975) Student Integration Model is a longitudinal study discovering why students leave higher education. Several types of leaving behaviors were identified, including transfer, temporary dropout, permanent dropout, voluntary withdrawal, voluntary dismissal, and academic failure. Students' background traits influence leaving behaviors, including race, school achievement, academic aptitude, family, finances, and educational aspirations. How the students interact with the academic and social systems will create a positive or negative experience. Students who are more successful in integrating into the institution are less likely to drop out.

**Figure 3**

*Illustration of Tinto's Student Integration Model* (1975)




*Note.* Tinto's Student Integration Model (Tinto, 1975). Adapted from "Dropout from Higher Education: A Theoretical Synthesis of Recent Research," by V. Tinto, (1975), *Review of Educational Research, 45*(1), pp. 89-125.

Academic preparedness and family background are critical factors of student success in this model. First-generation students are especially at risk, because they are the first to attend college. Continuing generations are advantaged with prior family

experience to set realistic expectations and establish critical connections. Additionally, low-income, first-generation students can struggle with the increasing cost of higher education. With proper financial assistance, these students will be successful. First-generation students rely heavily on this integration and are in danger of departure from the university.

## Imposter Phenomenon Literature

The imposter phenomenon research is robust in higher education. The literature identifies several correlations among demographic variables, mental health, and academic achievement. Understanding the history and prevalence is required to fully conceptualize the impression of IP on higher education, especially among first-generation college students.

### *Definitions and Foundational Research*

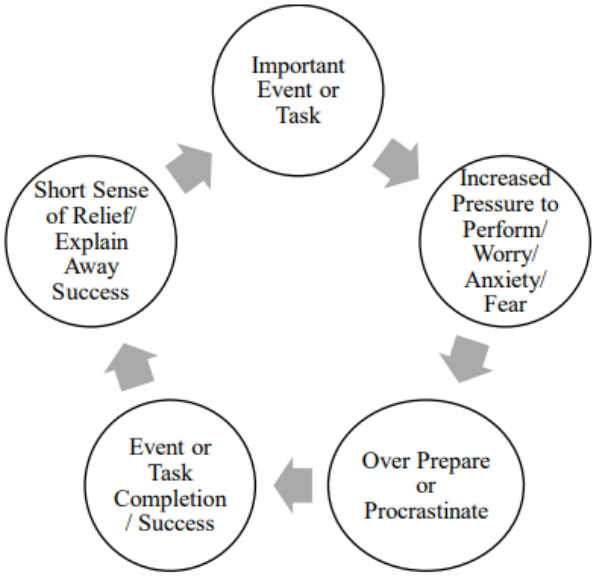
Clance and Imes (1978) started the conversation in 1978 with a study of 150 successful women – women with PhDs, respected professionals, or who earned accolades for academic achievement. Clance and Imes (1978) discovered that women did not experience internalized success, but attributed their accomplishments to luck. Clance and Imes (1978) coined this experience as the imposter phenomenon.

Clance and Imes (1978) observed two categories of the imposter phenomenon: individuals who had comparisons with relatives perceived as intelligent, or families who expected the individual to be perfect in everything. Families emphasizing a child, while disregarding the sibling's accomplishments can invalidate the sibling's achievements. This behavior can lead to a self-fulfilling prophecy and increased levels of the imposter phenomenon.

The second group in the study experienced the need for perfectionism from their families (Clance & Imes, 1978). These family members have unrealistic expectations, creating a more considerable risk of failure. This behavior intends to support the child, but that does not always happen. When the child faces an arduous task, there is dissonance between the family and the child's perceptions of their ability. This dissonance can cause intellectual impostorism, as the child cannot live up to the family's expectations.

**Figure 4**

*Diagram Depicting the Imposter Cycle Based on Clance (1985).*




*Note.* Clance Imposter Cycle (Clance & Imes, 1978). Adapted from "The Imposter Phenomenon in High Achieving Women: Dynamics and Therapeutic Intervention" by P. Clance and S. Imes, 1978, *Psychotherapy: Theory, Research & Practice, 15*(3), p. 241.

Joan Harvey (1981) expanded the literature by asserting that the imposter phenomenon does not only affect successful women. Instead, it is dependent on the task associated with perceptions of failure. Harvey and Katz (1985) described an imposter as

someone who works hard for success but still feels like a fake. No matter the positive experience, imposters perceive they do not deserve success and trick people into believing their talent (Harvey & Katz, 1985).

Both Clance and Imes's (1978) and Harvey's (1981) definitions are multifaceted, characterizing the imposter phenomenon based on negative self-worth, pressure to be perfect, self-criticism, and duplicitous ideation. Kolligian and Sternberg (1991) agreed with this in their study, referring to the imposter phenomenon as perceived fraudulence. However, the contrast between the three is that perceived fraudulence focuses on impression management and self-monitoring by those concerned about self-worth and social image. These were constructs unfamiliar to previous definitions.

Leary et al. (2000) defined three critical attributes of the imposter phenomenon: a sense of being a fraud, fear that others will suspect fraudulence, and internalizing success to maintain impostor feelings. They contend these characteristics are paradoxical, stating that imposters fear others will suspect fraudulence when they downplay achievements and externalize success (Leary et al., 2000). Unlike the previous definitions, this one-dimensional approach places inauthenticity as the catalyst of the imposter phenomenon. It postulates that feeling like a fraud can be among many individuals, not just successful people.

### *Prevalence*

Although first coined in 1978 by Clance and Imes, the prevalence of the imposter phenomenon continues to affect many students to this day. According to Sakulku and Alexander (2011, p. 1), 70% of the world population will experience the imposter phenomenon in their lifetime. Research strongly identifies several areas where the

imposter phenomenon influences external factors, including college students (Bernard et al., 2017; Christensen et al., 2016; Cokley et al., 2017), working professionals (Bechtoldt, 2015; Brauer & Proyer, 2017; Matthews & Clance, 1985), faculty (Hutchins & Rainbolt, 2017; Hutchins et al., 2018), and many more.

Bravata et al. conducted a systematic review of the prevalence, predators, and treatment of the imposter phenomenon in 2019. Sixty-six studies were analyzed, involving 14,161 participants (Bravata et al., 2019). According to the results, prevalence rates of IP had significant variations, ranging from 9% to 82%, depending on the screening tool and cutoff assessment (Bravata et al., 2019). Bravata et al. (2019) reported that the imposter phenomenon was common in men and women, regardless of age.

Half of the studies were on student populations, and 29 specifically evaluated undergraduate students (Bravata et al., 2019). The imposter phenomenon caused students to fear imperfection and maintain social status among their peers; however, self-worth and social support negatively correlated with the imposter symptoms (Bravata et al., 2019). Bravata et al. (2019) found feelings associated with IP related to pessimism, perfectionism, and low self-esteem.

There is a high prevalence of IP, but this may result from publication bias to support the study (Bravata et al., 2019). Bravata et al. (2019) found that each study reported at least some participants who have experienced the imposter phenomenon. This well-studied topic is common in higher education and continues to influence student development.

Faculty and staff also experience the imposter phenomenon. McDowell et al. (2015) explored the imposter phenomenon by comprehensively studying university

employees at a southeastern university. The study's results supported an inverse relationship between the imposter phenomenon and self-efficacy, in addition to the imposter phenomenon and perceived organizational support.

The study provided 588 employees to measure self-efficacy, organizational support, and the imposter phenomenon. The 10-item general self-efficacy scale developed by Schwarzer and Jerusalem (1995) measured self-efficacy. The eight-item scale from the Eisenberger et al. (1986) scale analyzed perceived organizational support. Finally, the 20-item scale by Clance (1985) examined the impostor phenomenon.

According to McDowell et al. (2015), the relationship between self-efficacy and IP was negative and significant. Notably, all employees were in the sample, including blue-collar workers and upper-level administration. Each classification had shown experiences with the imposter phenomenon.

### *Measuring the Imposter Phenomenon*

Multiple scales measure the imposter phenomenon, primarily due to the definition variations. Harvey (1981) developed the first survey consisting of 14 items. Both graduate and undergraduate students were in the study. Afterward, the Clance Imposter Phenomenon Scale [CIPS] was conceived in 1985 by the original researcher Pauline Clance. The CIPS incorporates fear of evaluation and being less than others, feelings not addressed by the Harvey Imposter Scale (Mak et al., 2019). According to Mak et al. (2019), the most commonly used scale for measuring the imposter phenomenon is the Clance Imposter Phenomenon Scale.

The 51-item Perceived Fraudulence Scale (Kolligian & Sternberg, 1991) and the 7-item Leary Imposter Scale (Leary, 2000) are also used to analyze the imposter

phenomenon. The 51-item scale focuses on self-criticism, achievement, and ideation characteristics. In contrast, the 7-item scale uses the attributes of a sense of being a fraud, fear of discovery, and internalizing success. Despite multiple scales measuring the imposter phenomenon, studies use the Clance Imposter Phenomenon Scale as the preferred choice.

A few studies address validation and systematically evaluate their properties. Chrisman et al. (1995) determined the validity of the Clance Imposter Phenomenon scale (Clance, 1985) and the Perceived Fraudulence Scale (Kolligian & Sternberg, 1991). The comparison revealed similar internal-consistency reliability, and the imposter phenomenon was similarly measured (Chrisman et al., 1995). Chrisman et al. (1995) recommended the CIPS due to the shorter nature of the scale.

Compared to the previous study, Mak et al. (2019) completed a more comprehensive systematic review of the four impostor phenomenon measurement scales: Harvey Imposter Scale (HIPS) (Harvey, 1981), Clance Imposter Phenomenon Scale (CIPS) (Clance, 1985), Perceived Fraudulence Scale (PFS) (Kolligian & Sternberg, 1991), and Leary Imposter Scale (LIS) (2000). The study specifically examined the psychometric properties of previously completed research. Out of 716 potential studies, Mak et al. (2019) evaluated only 18. Mak et al. (2019) reported that of the 18 studies, 11 examined the CIPS, five examined HIPS, one examined the LIS, and one examined the PFS.

The study evaluated internal consistency, construct validity, reproducibility: agreement, reproducibility: reliability, responsiveness, floor or ceiling effects, and interpretability (Mak et al., 2019). Terwee et al. (2007) and the Standards for Educational

and Psychological Testing measurements defined the ratings (Mak et al., 2019). Although the imposter phenomenon is not a diagnosed medical condition, the health status questionnaire assessment was deemed appropriate by Mak et al. (2019).

According to the research, most studies selected provided information for content validity and internal consistency (Mak et al., 2019). According to Mak et al. (2019), a "gold standard" was not identified based on criterion validity. The appraisal tool stated that a correlation coefficient must be equal to or greater than 0.70 to be considered gold (Terwee et al., 2007). The CIPS scale is the instrument of choice by the general population, cited by several studies as being more sensitive in characterizing high and low impostorism (Holmes et al., 1993). This characterization is due to its sensitivity and reliability (Holmes et al., 1993). However, classifying the assessment as a gold standard requires further research.

## Impostor Phenomenon and Demographic Characteristics

Demographic information is imperative in any research. Demographics can help researchers understand how dependent variables are affected by demographic variables. There are numerous studies that highlighted how the imposter phenomenon influences demographics. While more information must be collected to understand the entire picture of the imposter phenomenon, the current research identifies variances in gender, age, and racial identity (Brauer & Proyer, 2017; King & Cooley, 1995; McGregor et al., 2008; Patzak et al., 2017; Peteet et al., 2015; Thompson et al., 1998).

### *Gender*

Although the original study focused on educated women, the imposter phenomenon and the impact on gender contain contradictive research. Studies have

indicated that women experience the imposter phenomenon more than men (King & Cooley, 1995; McGregor et al., 2008; Patzak et al., 2017), while others have stated the opposite (Badawy et al., 2018). Then, studies highlight no gender differences in the imposter phenomenon experience (Cowman & Ferrari, 2002; Thompson et al., 1998).

Bravata et al. (2019) performed a systematic review of 33 articles analyzing gender differences—16 studies reported higher rates for women; Hutchins et al. (2017) found men with higher imposter symptoms and 17 studies found no differences. The results are inconclusive on whether women experience the imposter phenomenon more or if there is no difference among gender. Studies showing increased imposter symptoms in women reported lower levels of self-compassion (Patzak et al., 2017), higher academic achievement (King & Cooley, 1995), and moderate levels of clinical depression (McGregor et al., 2008). The academic achievement piece is attractive, due to contradicting research in 2006 by Kumar and Jagacinski. Kumar and Jagacinski (2006) reported that women had more significant imposter fears than men. These women experience higher test anxiety levels, negatively affecting achievement confidence (Kumar & Jagacinski, 2006).

Very few studies have reported men with higher rates of impostorism than women. Badawy et al. (2018) explored the relationship between feedback and accountability in association with IP. Findings depicted men reacting more negatively than women to work outcomes (Badawy et al., 2018). Hutchins et al. (2018) further examined work outcomes and discovered that individuals with elevated levels of IP contributed to emotional exhaustion and job satisfaction among college faculty members.

Individuals, the majority of men, who had high IP displayed low job satisfaction and higher emotional exhaustion (Hutchins et al., 2018).

Seventeen studies from the Bravata et al. (2019) research found no differences in gender and IP which is over half of the articles. These results could be due to research not focusing primarily on gender, but evidence suggests that IP has no effect on gender or that women experience it more than men. Other data—48%, according to Bravata et al. (2019)—proposes that women have more significant IP symptoms than men. However, men do experience the imposter phenomenon.

### *Age*

Very few studies compare the imposter phenomenon by age. Bravata et al. (2019) discovered six studies with age as a predominant factor—two reported increased age associated with decreased imposter feelings, three studies found no effects, and one study found a negative correlation among working professionals, but not undergraduate students. The results were inconclusive if age plays a crucial role in experiencing the imposter phenomenon.

Thompson et al. (1998) and Brauer and Proyer (2017) were the two studies highlighting significant correlations between age and the imposter phenomenon. Brauer and Proyer (2017) analyzed the association between IP and positive coping skills, specifically playfulness. Both students and professionals experienced high imposter feelings if their playfulness was low (Brauer & Proyer, 2017). Working professionals also displayed a negative correlation between age and IP, but not for undergraduate students (Brauer & Proyer, 2017).

Thompson et al. (1998) explored imposter behaviors relating to success and failure feedback. Age was negatively associated with imposter feelings. Imposters were more embarrassed and ashamed after failure than after success (Thompson et al., 1998). Thompson et al. (1998) discovered that non-imposters attributed success to external factors, whereas imposters internalized deficient performance. Both Thompson et al. (1998) and Brauer and Proyer (2017) found significant correlations, but more research is needed to support the correlation between age and the imposter experience. This study explicitly addresses student classification (freshman, sophomore, junior, and senior) but could contribute to the literature on age.

### *Under-Represented Racial Minorities*

The imposter phenomenon also impacts under-represented racial minority students. Peteet et al. (2015) were among the first to explore Black and Hispanic students' predictors of IP. The study examined the first-generation student's psychological well-being and ethnic identity as potential contributing factors. There were several scales used to determine the level of predictors: the 12-item Multigroup Ethnic Identity Measure (Roberts et al., 1999), the Ryff Psychological Well-Being Scale (Ryff, 1989; Seifert, 2005), and the Clance Imposter Phenomenon Scale (Clance, 1985).

Consistent with the research, the study found that first-generation students experienced the imposter phenomenon more than continuing students (Peteet et al., 2015). Furthermore, Peteet et al. (2015) revealed that low ethnic identity and psychological well-being were predictors of IP. Evidence suggests that students with low ethnic identities are more likely to feel like they do not belong. The same is true for

students who have low psychological well-being. There are fewer coping skills to defect imposter feelings, leading to more significant experiences of impostorism.

McClain et al. (2016) expounded on Peteet et al. (2015) by analyzing ethnic identity, imposter feelings, and minority stress on the mental health of Black college students. Mental health has been a growing concern in higher education, especially among ethnic minority students at predominately white institutions (PWIs). Research highlighting the implications of impostorism is critical to supporting these students.

The results from McClain et al. (2016) were consistent with previous research. As with Peteet et al. (2015), McClain et al. discovered ethnic identity to be a positive predictor of mental health, while imposter feelings and minority status stress served as negative predictors. Minority students experienced minority status stress (MSS), including encounters with racism, microaggressions, discrimination, or lack of inclusion. Although a correlation did not exist between IP and MSS, it is clear they both have an impact on under-represented students' mental health.

## Imposter Phenomenon impacts on Academic Success

A primary component of the imposter phenomenon is achievement, particularly when imposters perceive external factors influencing their success. Research identifies several predictors of academic success: academic achievement, grades, persistence, satisfaction, acquisition of skills, and career success (York et al., 2015). The impostor phenomenon impacts many of these factors.

### *Academic Achievement*

Canning et al. (2020) explored the first-generation imposter phenomenon and its impact on STEM-related fields, performing a longitudinal study with 818 students and

2,638 experience-sampling observations. Introductory STEM courses from a significant, public midwestern university comprised the sample, with representation from only freshmen and sophomores. The study included measurements on perceptions of classroom competition, demographics, engagement, attendance, dropout intentions, and grades (Canning et al., 2020).

Canning et al. (2020) confirmed that the competitive nature of the STEM fields was associated with adverse course outcomes, especially among FGCS students. Perceived classroom competition had a strong relationship with the level of the imposter phenomenon experienced. Students in highly competitive classes perceived more imposter feelings. This competitiveness also indirectly affected course engagement, attendance, retention, and grades (Canning et al., 2020).

Despite students having a negative impact from the imposter phenomenon in the previous study, Ferrari (2005) exposed contradicting information about grades. Ferrari (2005) hypothesized that students who experienced high imposter feelings were more likely to cheat, due to the enormous pressure to succeed. Shockingly, students reporting lower levels of impostorism were more likely to plagiarize or cheat on exams (Ferrari, 2005). This data could be because these students cannot risk being reprimanded or exposed as a fraud**,** otherwise labeled as academic self-concept (ASC).

ASC is the student's attitudes, feelings, and perceptions of intellectual abilities or skills (Lent et al., 1997). When examined, it is easy to see a relationship between ASC and the imposter phenomenon experience, especially since IP is about perceptions of abilities. Cokely et al. (2015) supported this conjecture by finding a negative relationship between IP and ASC in women and men. Consistent with other research, imposters view

success through the lens of external assistance rather than internal achievement, leading to lower self-confidence. As for grades, the study did find a significant relationship between GPA and IP among women but not men (Cokely et al., 2015). Cokely et al. (2015) explained that women with higher IP reported higher GPAs, despite no significant correlation between the two variables.

### *Fear of Failure*

Fear of failure is a prominent construct in IP. Ross et al. (2001) claimed that controlling the fear of failure is the essential aspect of success, along with self-handicapping tendencies. Mehrabizadeh et al. (2005) reported a positive correlation between fear of success, fear of negative evaluation, and perfectionism with the imposter phenomenon, while self-esteem and the imposter phenomenon had a negative correlation. Kumar & Jagacinski (2006) investigated imposter fears and the relationship to test anxiety/negative confidence in intelligence. The study found a positive correlation between imposter fears and test anxiety and a negative correlation between imposter fears and confidence in personal intelligence (Kumar & Jagacinski, 2006). Kumar and Jagacinski (2006) also reported that men expressed imposter fears related to ability-avoid goals, while women were negatively associated with task goals. This study demonstrates that the two constructs of imposter fears and achievement goals are closely related. Results suggest achievement goals framework starts with imposter fears.

Neureiter and Traut-Mattausch (2016) further supported this claim by analyzing the fear of failure, fear of success, and low self-esteem. The data revealed low self-esteem as the most crucial factor, followed by high fear of failure and success (Neureiter & Traut-Mattausch, 2016). College can be stressful, with many reasons attributed to fear

of failure: classroom rigor, social involvement, housing issues, or lack of support. Failure to attribute success to internal factors can result in increased fear and decreased self-esteem.

Despite the overwhelming fear of the imposter phenomenon, resources, including student life, academic success, multicultural affairs, and counseling, assist students through their fears (Cokley et al., 2013). Opportunities to identify and process impostorism appear more frequently for faculty and staff than students. Huffstutler and Varnell (2006) propose peer group programming, clear organizational expectations, and mentorship to combat IP feelings, including fear of failure. However, even with assistance, the imposter phenomenon feelings are challenging to mitigate.

### *Persistence*

Persisting to graduation is a critical element of academic success. Research identifies the imposter phenomenon as one of the barriers associated with persistence. Tao and Gloria (2019) explored the academic persistence of 224 women in STEM-related doctoral degrees. Participants reporting more significant imposter symptoms experienced lower levels of self-efficacy and viewed academics more negatively (Tao & Gloria, 2019).

The study revealed that imposter feelings' influence on academic persistence affected self-efficacy and perceptions (Tao & Gloria, 2019). Tao and Gloria (2019) discovered that programs with a higher percentage of women strongly correlated with persistence and impostorism. There are a few interpretations of this data. First, fewer women increased imposter feelings because of small representation. Women may feel the need to prove themselves as the minority. Contrarily, more women could exacerbate

imposter feelings if competition is high. Imposters may express dissonance, wondering why they are unsuccessful or comparing themselves to an unrealistic standard.

Like Tao and Gloria's (2019) research, Walker (2018) explored the effects of the imposter phenomenon in undergraduate STEM majors. The study analyzed 113 African American female students and their academic self-efficacy (Walker, 2018). Walker (2018) reported a significant negative relationship between IP and self-efficacy. More research is required to comprehend Tao and Gloria and Walker's correlation, but evidence suggests that IP and self-efficacy are connected.

STEM-related students are not the only population impacted by IP. Lee et al. (2021) postulated that students in an honors program experienced the imposter phenomenon more than students not in an honors program. The study revealed that honors students have more imposter feelings than non-honors students (Lee et al., 2021). However, non-honors and honors students were within the same range of frequent emotions of the imposter phenomenon. Despite this, Lee et al. (2021) implied the higher levels of imposter phenomenon attributed to honors program participation.

As previously mentioned, a sense of belonging is another pivotal factor in persistence (Astin, 1999; Tinto, 1975; Hausmann et al., 2009; Morrow & Ackermann, 2012). The literature is clear: students with a higher sense of belonging are more engaged in the institutional culture and less likely to leave the school. Students do not engage in academic and co-curricular experiences if they perceive themselves as imposters. Students with a lower sense of belonging have higher impostorism scores and decreased college adjustment (Graham & McLain, 2019).

Many institutions are combating IP effects on the sense of belonging through programmatic efforts to increase retention. MIT and California Technology have created programs about debunking myths, helping students understand IP, and supporting the transition to college (Parkman, 2016). These institutions recognize the impact of IP and have committed to making a change.

### *Mental Health and the Imposter Phenomenon*

Although not a diagnosis, the imposter phenomenon can exacerbate mental health concerns. Mental health in higher education is critical when analyzing the imposter phenomenon. Feelings of self-doubt, unworthiness, and fakeness impact a student's mental prowess over time.

Lanford and Clance (1993) presented valuable insight regarding the effects of the imposter phenomenon on mental health, specifically with mild depression. One hundred eighty-six students from a small liberal arts university in Southwest Arkansas participated in the study. These students completed the Clance Imposter Phenomenon Scale (Clance & Imes, 1978) and the Beck Depression Inventory [BDI] (Beck et al., 1996). Statistics displayed a positive correlation between IP scores and BDI scores. The research was firm in stating they were not suggesting causation between IP and clinical depression but showed a relation between both conditions.

Previous research has analyzed undergraduates, graduates, librarians, and STEM students. Out of the literature, there are common themes, such as fear of failure, fear of negative evaluation, and perfectionism. This study examined the relationship between the imposter phenomenon in a sample of 142 students ranging from undergraduates, graduate students, and professionals (Lanford & Clance, 1993). Participants completed an online

survey with demographic information, the Clance IP Scale (to measure IP), Performance Failure Appraisal (to measure fear of failure), Brief Fear of Negative Evaluation-II Scale (to measure fear of negative evaluation), the Perfectionism Cognitions Inventory, and the Perfectionistic Self-Presentation Scale (to measure perfectionism) (Lanford & Clance, 1993). The results from the study revealed scores on the imposter phenomenon, fear of failure, perfectionism, and fear of negative evaluation as significantly related to each other (Lanford & Clance, 1993). Lanford and Clance (1993) stated that the results do not demonstrate a causal relationship but support the idea that IP may be a variant of the constructs.

**Summary**

First-generation students are not going anywhere, and the compounding issues will increase. Research has demonstrated the need for first-generation students to be present in our institutions and the vital support to succeed. A few vital areas must be implemented, such as financial counseling, mental health support, academic services, and diversity services.

The imposter phenomenon exacerbates these issues and can cause students to become disengaged from their college experience. Over half of the entire student population is a significant amount to lose when higher education can make a difference between failure and success (RTI International, 2019). The following chapter will explain the methodology utilized to explore how the imposter phenomenon impacts first-generation student engagement in a community college and private university.

# Chapter Three: Methodology

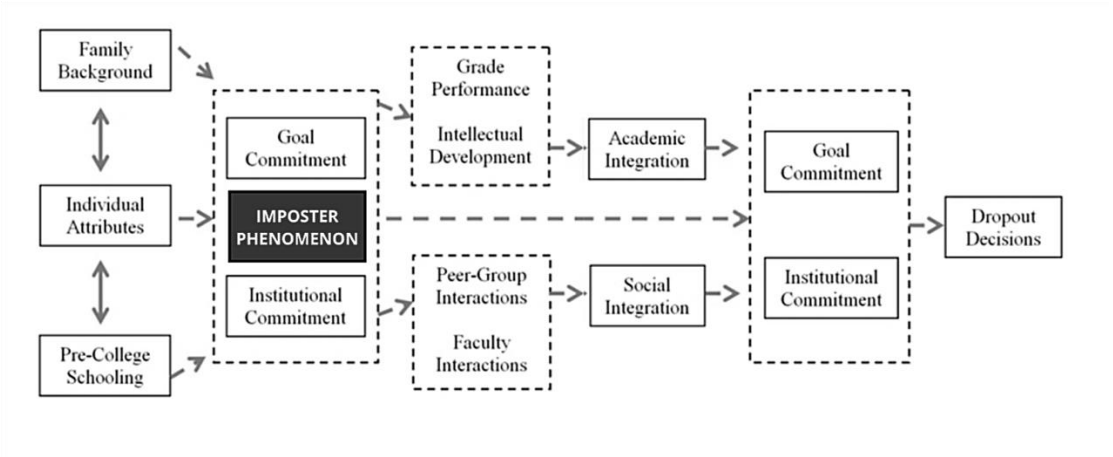
This study aimed to understand how to increase support for first-generation college students and how impactful the imposter phenomenon is on academic and co-curricular engagement. Documentation about the imposter phenomenon exists in research, specifically about the negative impact on student retention (Parkman, 2016). Fortunately, there is much research on the imposter phenomenon and first-generation students. However, there needs to be more information about the impact on student engagement, especially across institution types.

## Problem and Purpose Overview

Research demonstrates the critical role student engagement has on retention. Astin conducted a longitudinal study of college dropouts and found student involvement as a crucial indicator for leaving the institution (Astin, 1999), while Tinto's (1975) Student Integration Model discovered reasons why students leave higher education. Each theory identified several types of on-going behaviors, including transfer, temporary dropout, permanent dropout, voluntary withdrawal, voluntary dismissal, and academic failure (Tinto, 1975). Although Astin's theory provides a strong foundation for the study, Tinto's theory better describes the imposter phenomenon experience with involvement. Figure 5 incorporates the imposter phenomenon and how it fits into Tinto's theoretical framework. The imposter phenomenon impacts academic and social engagement, leading to dropout decisions.

**Figure 5**

*Illustration of Tinto's Student Integration Model with the Imposter Phenomenon Added* (1975).




*Note.* Tinto's Student Integration Model with the Imposter Phenomenon Added (Tinto, 1975). Adapted from "Dropout from Higher Education: A Theoretical Synthesis of Recent Research," by V. Tinto (1975), *Review of Educational Research, 45*(1), pp.89-125.

After an extensive review of the literature, the researcher did not find any study that completed a comparative analysis of the imposter phenomenon's impact on first-generation students' academic and co-curricular engagement. Through analysis of the participant responses, this study explored this topic and provided insight into how first-generation students navigate this phenomenon. The study expanded the current literature by utilizing a mixed-method study to learn how the imposter phenomenon impacted student development and identified resources to increase the retention of first-generation college students.

**Research Questions and Null Hypotheses**

The following research questions and null hypotheses guided the study:

1. How do first-generation students experience the imposter phenomenon?
2. What resources are needed to support first-generation college students experiencing the imposter phenomenon?
3. How do students feel the imposter phenomenon impacts academic engagement?
4. How do students feel the imposter phenomenon impacts co-curricular engagement?

   $H_{10;}$ First-generation students do not experience the imposter phenomenon more than continuing-generation students.

   $H_{20;}$ There is no difference in the imposter phenomenon experience among first-generation Freshmen, Sophomores, Juniors, or Seniors.

   $H_{30;}$ There is no difference in the imposter phenomenon experience among first-generation students at a community college or private university.

   $H_{3a0;}$ There is no difference in the imposter phenomenon experience among first-generation freshmen students at a community college or private university.

   $H_{3b0;}$ There is no difference in the imposter phenomenon experience among first-generation sophomore students at a community college or private university.

   $H_{40;}$ The imposter phenomenon does not influence the academic engagement of first-generation college students?

   $H_{4a0;}$ There is no difference in academic engagement among first-generation freshmen students at a community college or private university.

$H_{4b0;}$ There is no difference in academic engagement among first-generation sophomore students at a community college or private university.

$H_{50;}$ The imposter phenomenon does not influence the co-curricular engagement of first-generation college students?

$H_{5a0;}$ There is no difference in co-curricular engagement among first-generation freshmen students at a community college or private university.

$H_{5b0;}$ There is no difference in co-curricular among first-generation sophomore students at a community college or private university.

**Research Design**

This mixed method design further explored this phenomenon and better understood how colleges can better support their students. Research has long advocated using a mixed methods approach, as it can integrate and synergize multiple data sources to analyze complex problems (Poth & Munce, 2020). Moreover, the intentional data consolidation of a mixed-methods study provides a comprehensive view of a phenomenon (Shorten & Smith, 2017).

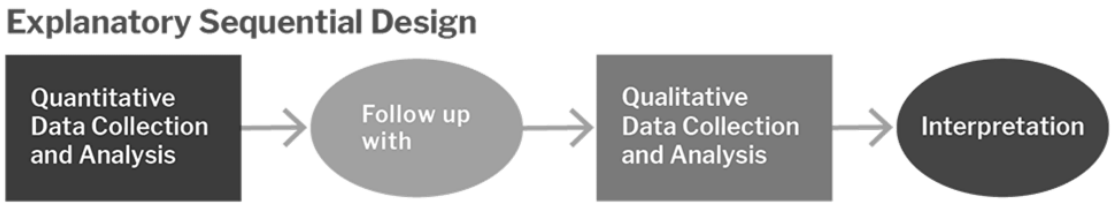
The study aimed to develop a conversation about the imposter phenomenon and analyze the deficiencies in student engagement. The quantitative component consisted of a descriptive cross-sectional survey measuring the imposter phenomenon and student engagement among first-generation and continuing-generation undergraduate students. The researcher utilized the Clance Imposter Phenomenon Scale (CIPS), the Engaged Learning Index (ELI), and the Co-Curricular Involvement Experience Index (CIEI) to collect quantitative data. Both descriptive and inferential statistics were performed on the participant responses to compare means across demographics. The Clance Imposter

Phenomenon Scale (Clance, 1985), designed to determine imposter insecurities and feelings of fraudulence, reported the imposter phenomenon experiences. The Engaged Learning Index collected data regarding academic participation, examining three key areas: meaningful processing, focused attention, and active participation. Excerpts from the Co-Curricular Involvement Experience Index determined the level and quality of participants' co-curricular involvement at their institution.

For the qualitative portion of the study, participants opted to participate in an interview, randomly selected, based on identifying as a first-generation college student and having frequent-to-intense experience with the imposter phenomenon, as reported in the CIPS. The responses from the quantitative section highlighted the correlation between engagement and impostorism, while the interview contextualized the experiences of IP among first-generation undergraduate students. This study explicitly applied an explanatory sequential design, incorporating quantitative data gathering and analysis followed by qualitative analysis (Creswell, 2015). The quantitative data were used as a lens to provide meaning for the qualitative data obtained through participant interviews. Figure 6 depicts the study's explanatory sequential design.

**Figure 6**

*Flowchart illustrating the Explanatory sequential design of mixed-methods research. Adapted and modified from Creswell (2013).*



*Note.* Creswell Explanatory Sequential Design (Creswell, 2015). Adapted from "Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice*"* by J. Creswell, 2006, *Field Methods 18*(1), pp.3-20

**Population and Sample**

The study collected data from a small private four-year university and a two-year community college. All undergraduate students qualified for the research. However, the study required a substantial sample of first-generation students to have enough data. This study defines a first-generation college student as any student whose parent(s) did not complete a four-year degree. The researcher disqualified participants who elected to remove themselves from the study or anyone under the age of 18.

The researcher used a stratified random sample to select the sample size. Random sampling occurred post-data collection to enhance participation. According to Fraenkel et al. (2012, p. 106), a stratified random sample "is a sample selected so that certain characteristics are represented in the sample in the same proportion as they occur in the population." Warner (2013) stated,

> most analysts agree that the number of subjects (N) should be large relative to the number of variables included in the factor analysis (*p*). In general, N should never be less than 100; it is desirable to have N > 10. (p. 842),

where *p* is the number of variables. The researcher had 12 variables in the model, making the sample size of 120+ participants the target for an accurate representation.

**Instrumentation**

Student samples from the three different institutions responded to a 20-to-30-minute cross-sectional survey using questions from the Clance Imposter Scale (Clance &

Imes, 1978), the Engaged Learning Index (Schreiner, 2010), and the Co-Curricular Involvement Experience Index (Endress, 2000) (adapted from the 1987 Winston and Massaro's Extracurricular Involvement Inventory). The institutions agreed to send the survey two weeks apart to enhance participant response. After the survey, the researcher contacted first-generation students who scored frequent or intense on the Clance Imposter Phenomenon Scale. The qualitative portion of the study consisted of students who answered that they would be interested in a follow-up interview in the survey.

### *Clance Imposter Phenomenon Scale (CIPS)*

The CIPs (Clance Imposter Phenomenon Scale) is the leading test in research to determine if individuals have imposter characteristics (Mak et al., 2019). The scale consists of 100 points, with 20 Likert-style items in total. The questions range from 1—the statement is not true at all to 5—very true. Scores higher than 80 designate intense feelings of impostorism. Scores between 61 and 80 indicate moderate imposter experiences, while scores between 41 and 60 mean moderate feelings of impostorism. Finally, results report little imposter characteristics if a score is 40 or lower. Dr. Pauline Clance granted permission to utilize the CIPS in the study.

#### Reliability and Validity of CIPS

The researcher chose the Clance Imposter Phenomenon due to its high reliability and internal consistency. Research has demonstrated internal reliability with Cronbach's alpha scores of $\alpha = 0.96$, $\alpha = 0.92$, and $\alpha = 0.91$ (Chae et al., 1995; Chrisman et al., 1995; Holmes et al., 1993). A recent study from Mak et al. (2019) reported that out of 11 CIPS studies, Cronbach alphas were from .85 to .96. Chrisman et al. (1995) specifically found high internal consistency reliability and both discriminate validity and construct validity.

The CIPS, compared with psychological well-being, depression, self-esteem, self-monitoring, and social anxiety, determined discriminate validity (Chrisman et al., p. 458). Principal components were evaluated by Chrisman et al. (1995), yielding three stable factors: fake, discount, and luck.

French et al. expanded on Chrisman et al. in 2008 through a confirmatory factor analysis of the Clance Imposter Phenomenon Scale items, internal consistency reliability, and factor structure. According to the study, Fake/Discount and Luck were the two factors found best to fit the model. On the contrary, Simon and Choi (2018) performed a confirmatory factor analysis and postulated that only one factor best fit the CIPS. Regardless of the factor, the Clance Imposter Phenomenon offers high internal consistency and reliability, making it the most decisive choice for the study.

***Engaged Learning Index (ELI)***

This Engaged Learning Index used in the survey contains 10 items to measure class engagement, as shown in Appendix B. The ELI measures three types of academic engagement: meaningful processing, focused attention, and active participation. Items range from 1-strongly disagree to 6-strongly agree. Participants could score a maximum of 60 points. Students with higher scores engaged more academically in class. Dr. Laurie Schreiner granted permission to use the ELI in the study.

**Table 1**

*Summary of Variables and Definitions*

| Variable | Definition |
|---|---|
| Meaningful Processing | Sum of the following five items: I often discuss with my friends what I'm learning in class (ELI1), I feel as though I am learning things in my classes that are worthwhile to me as a person (ELI3), I can usually find ways of applying what I'm learning in class to something else in my life (ELI5), I find myself thinking about what I'm learning in class even when I'm not in class (ELI8), I feel energized by the ideas that I am learning in most of my classes (ELI9) {1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree} |
| Focused Attention | Sum of the following three items: It's hard to pay attention in many of my classes (ELI4), In the last week, I've been bored in class a lot of the time (ELI7), Often I find my mind wandering during class (ELI10) {1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree} |
| Active Participation | Sum of the following two items: I regularly participate in class discussions in most of my classes. (ELI2), I ask my professors questions during class if I do not understand (ELI6) {1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree} |

### Reliability and Validity of ELI and the Thriving Quotient

Numerous studies containing over 30,000 students at four-year institutions (Schreiner & Nelson, 2013) and smaller studies with nontraditional students (Petridis, 2015; Petridis & Schreiner, 2013) have proven thriving to be a valid and reliable construct. The Thriving Quotient instrument (including the Engaged Learning Index) has demonstrated high reliability (Schreiner & Nelson, 2013). According to Cronbach's alpha reliability, the factors estimate a range between $\alpha = .77$ and $\alpha = .87$, with an internal consistency of $\alpha = .89$ (Schreiner, 2016). The Engaged Learning Index was at the top of the range at $\alpha = .87$.

#### *Co-Curricular Involvement Experience Index*

The revised portion of the Co-curricular Involvement Experience Index from Endress (2000) measured co-curricular involvement. Winston and Massaro's (1987)

Extracurricular Involvement Inventory provided the framework for the adapted CIEI. The modifications to the CIEI include measuring the cumulative hours of involvement rather than involvement in each activity. The literature indicates light utilization of Winston and Massaro's (1987) Extracurricular Involvement Inventory (EII) in its 30-year history, due to the execution process. Coressel (2014) contended that the EII's index score is not as practical as using involvement hours. Second, the length of the instrument caused many participants to complete the survey only partially. Endress (2000) developed the CIEI to combat the low response rate and enhance the validity of measuring student involvement. Vetter (2018) utilized the Co-curricular Involvement Experience Index in his study by combining leadership roles and hours of involvement in a composite measure. This study used the CIEI similarly to assess quantitative and qualitative co-curricular involvement.

A total of five items described involvement in an organization or group, ranging from 4-Very Often to 1-Never. Not applicable was also added in the modified version to account for students who were not involved in an organization. There are two items in the amount of involvement a participant has in student organizations. The first item ranges from 0 – 0 hours/week to 6 – over 40 hours/week. The second item asks about the number of elected or appointed positions held during the semester (0-10 or more). Table 2 depicts the variables chosen to measure quantitative and qualitative involvement. The EII and the CIEI are open-source survey instruments and did not require permission to use in this study.

**Table 2**

*Summary of Variables and Definitions for the CIEI*

| Variable | Definition |
|---|---|
| Quantity of Involvement | Sum of the following two items: Please indicate the typical number of hours per week that you devoted to your involvement in student organizations or student leadership roles during this semester (INVOLVE HOURS): {0 = 0 hours/week, 1 = 1 to 8 hours/week, 2 = 9 to 16 hours/week, 3 = 17 to 24 hours/week, 4 = 25 to 32 hours/week, 5 = 33 to 40 hours/week, 6 = over 40 hours/week}; Please indicate the number of elected or appointed positions you have held during this semester (e.g., president/chairperson/captain/editor, secretary, treasurer, committee/project chairperson, Resident Assistant (RA), orientation leader) (LEADER) {0, 1, 2, 3, 4,… 10 or more} |
| Quality of Involvement | Includes the following five items: Select the student organization or leadership role that you were most involved with this semester. In reference to that experience, please respond to the following statements about your involvement: When I attended organization meetings this semester, I expressed my opinion and/or took part in discussion (QUALITY1); When I was away from members of the group(s)/organization(s) this semester, I talked with others about the organization(s) and its activities, or wore a shirt or button to let others know about my involvement (QUALITY2); When the group(s)/organization(s) sponsored a program or activity this semester, I made an effort to encourage other students and/or members to attend (QUALITY3); I volunteered or was assigned responsibility to work on something that the group(s)/organizations(s) needed to have done (QUALITY4); I fulfilled assigned duties or responsibilities to the group(s)/organization(s) on time this semester (QUALITY5) {4 = very often, 3 = often, 2 = occasionally, 1 = never or not applicable} |

### Reliability of the Co-curricular Involvement Experience Index

The reliability of the Co-curricular Involvement Experience Index (Endress, 2000) stems from Winston and Massaro's (1987) Extracurricular Involvement Inventory. Two separate studies established the validity and reliability of the EII. First, Winston and Massaro (1987) completed test-retest reliability by having a sub-group retake the EII after two weeks. Results reported the Pearson product-moment correlations as .97 (Winston & Massaro, 1987). Comparisons of the EII results with the Clubs and Organizations section results of the College Students Experience Questionnaire (CSEQ) determined validity.

According to Winston and Massaro (1987), the correlations were .45 for the EII and .55 for the CSEQ. Research indicates correlations range from +1.00 to -1.00 (positive or negative), and the closer to 1, the stronger the connection (Ott & Longnecker, 2010). The .97 test-retest correlation is a strong, positive correlation, indicating that the first and second tests are closely related. The reliability correlation is only .45 and .55, which means the relationship is not as strong. However, Winston and Massaro (1987) reported the statistical significance at $p < .001$, making the EII (and the CIEI) reliable and valid.

**Data Collection**

The researcher utilized a mixed-method approach by distributing surveys to collect quantitative data and conducting follow-up interviews to collect qualitative data. First-generation and continuing-generation students completed the survey; the researcher interviewed only first-generation students. Online survey distribution occurred through the *Qualtrics* platform, while interviews occurred via the ZOOM platform.

For distribution, the researcher contacted the institutional review boards at each school for approval to survey current continuing-generation and first-generation undergraduate students. The researcher completed each institution's IRB (Institutional Review Board) requirements. The community college sent emails on behalf of the researchers twice in September, two weeks apart. All full-time day school students of the four-year private university were emailed in October by the researcher directly, with approval from the research office.

**Data Analysis**

Chapter Four used descriptive and inferential statistics to examine the survey results and confirm the hypotheses/research questions. Analysis of the hypotheses with

two independent variables (*H1, H3, H4, H4a, H4b, H5, H5a, and H5b*) used the independent *t*-test method. The variables compared were first-generation students and continuing-generation students and community college and private college. The hypothesis with more than two variables (*H2)* were analyzed using the ANOVA method. The variable compared was student classification—freshmen, sophomore, junior.

According to Bluman (1992), the *t-test* is "a statistical test for the mean of a population and is used when the population is normally or approximately normally distributed, and s is unknown" (p. 442). An independent *t-test* examines the difference between two non-related variables containing a normally or approximately normally distributed population (Bluman, 1992). This test is appropriate to answer *H1, H4,* and *H5* because there are two independent variables: first-generation and continuing-generation students.

ANOVA, or analysis of variance, determines the means of three or more populations (Bluman, 1992). According to Bluman (1992), this method is appropriate for comparing multiple means, whereas only using the *t*-test will result in skewed data by comparing two means. All compared means must happen simultaneously to represent the data. Another issue with only using the *t*-test instead of ANOVA is how pairwise comparisons increase the probability of rejecting the null hypothesis when true (Bluman, 1992). Finally, the number of *t*-tests exponentially increases with more means to compare. It is better to complete one ANOVA than to have multiple *t*-tests, which could result in corrupt data. *H2, H3, H4a, H4b, H5a,* and *H5b* used ANOVA due to the multiple independent variables (student classification and institution type).

The qualitative data interview questions involved video recordings, with only the audio retained after the recordings. The researcher performed a thematic analysis of the information collected from the interview. According to Bruan and Clarke (2006), thematic analysis examines qualitative data to identify, analyze, and report patterns. The process included: the researcher identifying and familiarizing with the data, coding the information, organizing it into recognizable themes, finalizing themes, reviewing themes, and analyzing the document. The study utilized this method, due to the flexibility of theoretical and epistemological frameworks. Also, thematic analysis is foundational for other qualitative research methods commonly used by researchers (Bruan & Clarke, 2006).

**Ethical Considerations**

The researcher or the institution emailed the survey to participants upon IRB approval. There were minimal to no risks associated with the study. The study design minimized risks by asking for permission, maintaining privacy, and upholding confidentiality. Participants did not typically complete this survey on any given day, and a minor emotional reaction might have occurred. However, those who volunteered for the study could remove themselves at any time. Additionally, students signed an informed consent form highlighting the potential risks of participation.

The researcher stored all data on a password-protected computer. In addition, the researcher deidentified data and destroyed related codes, with retained data kept for the required retention period (3 years). Each participant provided verbal permission to record the interview on ZOOM. The utilization of Pseudonym names (Creswell & Poth, 2018, p. 151) was instrumental in protecting identities during the interview process. A citation and

copy of the dissertation were sent to Dr. Laurie Schreiner and Dr. Pauline Clance, as requested by the authors of the scales. Shared results include a public dissertation available to anyone.

**Reflexivity**

Reflexivity is a powerful tool used in qualitative research to identify personal bias and discuss its impact on the study. According to Barrett et al. (2020), reflexivity must occur throughout the entire research study, counting the individual and collective process. This process includes recognizing what started the research, how it influences participant interactions, and how reports can be biased. According to Jootun et al. (2009, p. 45.), qualitative research is prone to subjectivity since the "interpretation of the participant's behavior and collected data is influenced by the values, beliefs, experience, and interest of the researcher." Reflexivity allows the researcher to be transparent about the process, ensuring rigorous qualitative research.

The researcher has a few personal connections to this study that requires reflexivity. First, the researcher identifies as a first-generation college student. Neither parent attended college, let alone graduated high school. Through lived experiences, the researcher relates to the challenges associated with the first-generation student status. This personal bias potentially influences the questions chosen for the qualitative study.

Second, the researcher experienced high levels of the imposter phenomenon in college. The researcher may want personal validation for his experience, expecting first-generation students to have higher levels of the imposter phenomenon and lower levels of engagement. The information found to support the study is grounded in the expectation that most students will experience the imposter phenomenon sometime in their college

experience. The researcher must remain unbiased in the interviews to avoid reactions to the answers. These reactions can impact results, especially if the researcher negatively reacts to first-generation students who have not experienced the imposter phenomenon.

Third, the researcher has a dual relationship with the research sites. The researcher is an adjunct professor at the community college. However, there is an insignificant risk of coercion because the class was not required to participate in research as a course requirement. The student's decision to participate in the research did not affect grades, letters of recommendation, or other opportunities. Distribution support came from the school's research departments.

The researcher also serves as a Director of Housing at the small private institution. However, students were broadly selected, including people outside the class and students living off campus. Participation in the survey did not affect the students' live-on experience. The data collection process did not mention the role of the researcher in preventing bias. However, most students live on campus and know the researcher's name.

**Summary**

The study utilized a mixed-methods analysis to investigate the impact of the imposter phenomenon on student engagement. Collected data came from two different institutions: a mid-size private and a community college. This method type allowed the researcher to identify trends in the quantitative data and explain the impacts using qualitative data, otherwise known as an explanatory sequential design. The sampling techniques used in the study were purposeful and relevant to the study's participants. Participants completed the survey for quantitative data and participated in an interview

about their experience with the imposter phenomenon. The researcher addressed ethical considerations, including the importance of reflexivity. As a first-generation college student, the researcher is personally invested in the study's outcomes. However, the risks of this potential bias were addressed. The next chapter describes the results attained from this mixed-method study.

## Chapter Four: Analysis of Data

This study explored how the imposter phenomenon impacted first-generation college students. The study contains multiple comparisons in the analysis, including institution type, student classification, first-generation status, academic involvement, and co-curricular engagement. Research supports the proposed hypothesis that first-generation students experience the imposter phenomenon more than continuing-generation students (McClain et al., 2016; Peteet et al., 2015). Students not committed to the institution will likely leave without a sense of belonging (Tinto, 1975). Higher education administrators must understand the impacts of the imposter phenomenon to retain first-generation students effectively.

A mixed methods approach provided the foundation for this study, gathering data using the Clance Imposter Phenomenon Scale (CIPS), the Engaged Learning Index (ELI), and Co-Curricular Involvement Experience Index (CIEI). Originally the researcher planned on using three institutions (a public, private, and community college) to expand the validity of the students, but the public university denied access to participants. However, a positive response rate came from the two institutions, and a third was not needed. The findings and results from the quantitative portion presented in this chapter do not reflect the research. Despite this experience, the researcher discovered unexpected information from first-generation students' quantitative and qualitative experiences.

### Participant Demographics

The researcher emailed all in-person undergraduate students at the four-year private institution, while the research office at the two-year public community college sent out the survey. This process occurred twice within a four-week timeframe. Out of the

two institutions, 387 students responded to the survey. The researcher performed an analysis to detect inconsistencies, select fields causing the inconsistency, and correct the erroneous fields. According to De Jonge and Van Der Loo (2013), research requires consistent data to perform solid statistical analysis; this is data that missing values, unique values, and errors are either removed, corrected, or imputed. After establishing consistent data and removing disqualified participants (those who declined the consent or were under 18 years old), 257 participants remained for the study.

The researcher utilized a post-collection stratified random sample to select the sample size. According to Fraenkel et al. (2012), a stratified random sample "is a sample selected so that certain characteristics are represented in the sample in the same proportion as they occur in the population" (p. 106). Warner (2013) stated,

> most analysts agree that the number of subjects (N) should be large relative to the number of variables included in the factor analysis (p). In general, N should never be less than 100; it is desirable to have $N > 10p$, (p. 842)

where *p* is the number of variables. The researcher plans to have 12 variables in the model, making the sample size of 200+ participants the target for an accurate representation. The sample needed to accurately represent the proportions of first-generation students (42.1%) to continuing-generation students (57.9%). To combat this, the researcher randomly selected 216 total participants for the data, 91 first-generation students and 125 continuing-generation students.

All participants were from a private four-year university or two-year public community college. The data contained a significant representation of demographics, including first-generation students, freshmen, sophomores, juniors, seniors, non-

traditional students (over 24 years old), and non-binary gender. Most students were under 24 years (79.6%), while a few were older than 24 (20.4%). The separated data reveals that more non-traditional students are attending the community college. Table 3 depicts the complete demographic data.

**Table 3**

*Overall Demographic Data – Total Sample*

| Student Characteristics | | *n* | % |
|---|---|---|---|
| Gender | | | |
| | Male | 56 | 25.9% |
| | Female | 139 | 64.4% |
| | Non-Binary | 16 | 7.4% |
| | Prefer not to say | 5 | 2.3% |
| Institution Type | | | |
| | 4-Year Private | 105 | 48.6% |
| | 2-Year Public Community College | 111 | 51.4% |
| First-Generation Status | | | |
| | Yes | 91 | 42.1% |
| | No | 125 | 57.9% |
| Student Classification | | | |
| | Freshman | 119 | 55.1% |
| | Sophomore | 51 | 23.6% |
| | Junior | 27 | 12.5% |
| | Senior | 19 | 8.8% |
| Age | | | |
| | 18-20 | 137 | 63.4% |
| | 21-23 | 35 | 16.2% |
| | 24-26 | 17 | 7.9% |
| | 27-30 | 5 | 2.3% |
| | 31-34 | 4 | 1.9% |
| | 35-38 | 9 | 4.2% |
| | 39-42 | 2 | 0.9% |
| | 43-46 | 2 | 0.9% |
| | Over 50 | 5 | 2.3% |

### *Four-Year Private University Student Data*

The four-year private university student sample was 48.6% (n = 105). There was 66.7% female (n = 70), 22.9% male (n = 24), 7.6% non-binary (n = 8), and 2.9% preferred not to say (n = 3). Participants in the study self-reported their first-generation student status. According to the data, 33.3% responded that they were a first-generation student (n = 35), while 66.7% of students reported as continuing-generation students (n = 70). There was representation from each student classification: freshman (40%, n = 42), sophomore (26.7%, n = 28), junior (16.2%, n = 17), and senior (17.1%, n = 18). Of note, the total first-generation population at the four-year private institution is 17% (n = 201). Table 4 summarizes the demographic data for the four-year private university student sample.

**Table 4**

*Private 4-year School Sample*

| Student Characteristics | | *n* | % |
|---|---|---|---|
| Gender | | | |
| | Male | 24 | 22.9% |
| | Female | 70 | 66.7% |
| | Non-Binary | 8 | 7.6% |
| | Prefer not to say | 3 | 2.9% |
| First-Generation Status | | | |
| | Yes | 35 | 33.3% |
| | No | 70 | 66.7% |
| Student Classification | | | |
| | Freshman | 42 | 40.0% |
| | Sophomore | 28 | 26.7% |
| | Junior | 17 | 16.2% |
| | Senior | 18 | 17.1% |
| Age | | | |
| | 18-20 | 80 | 76.2% |
| | 21-23 | 20 | 19.0% |
| | 24-26 | 3 | 2.9% |
| | 27-30 | 1 | 1.0% |
| | 35-38 | 1 | 1.0% |

More first-generation students responded to the survey than proportionate to the total population.

### *Community College Student Data*

The two-year public community college student sample was 51.4% (n = 111). There were 62.2% female (n = 69), 28.8% male (n = 32), 7.2% non-binary (n = 8), and 1.8% preferred not to say (n = 3). Participants in the study self-reported their first-generation student status. According to the data, 50.5% responded that they were a first-generation student (n = 56), while 49.5% of students reported as continuing-generation students (n = 55). There was representation from each student classification: freshman (69.4%, n = 77), sophomore (20.7%, n = 23), junior (9.0%, n = 10), and senior (0.9%, n = 1). Interestingly, there should only be freshmen and sophomore students at the two-year community college. However, a few students may transfer in credits, which explains the reported junior and senior status. Furthermore, the first-generation population at the two-year community college is 50.9% (n = 2,225). The first-generation student response is almost parallel with the total population. Table 5 summarizes the demographic data for the two-year community college student sample.

**Table 5**

*Community College Sample*

| Student Characteristics | | *n* | % |
|---|---|---|---|
| Gender | | | |
| | Male | 32 | 28.8% |
| | Female | 69 | 62.2% |
| | Non-Binary | 8 | 7.2% |
| | Prefer not to say | 2 | 1.8% |
| First-Generation Status | | | |
| | Yes | 56 | 50.5% |
| | No | 55 | 49.5% |
| Student Classification | | | |
| | Freshman | 77 | 69.4% |
| | Sophomore | 23 | 20.7% |
| | Junior | 10 | 9.0% |
| | Senior | 1 | 0.9% |
| Age | | | |
| | 18-20 | 57 | 51.4% |
| | 21-23 | 15 | 13.5% |
| | 24-26 | 14 | 12.6% |
| | 27-30 | 4 | 3.6% |
| | 31-34 | 4 | 3.6% |
| | 35-38 | 8 | 7.2% |
| | 39-42 | 2 | 1.8% |
| | 43-46 | 2 | 1.8% |
| | Over 50 | 5 | 4.5% |

### *Missing Data Analysis – Discrepancies in Data*

Most participants completed the Clance Imposter Phenomenon Scale. Only a few did not answer all the questions, removing them from the study. However, significant data from the co-curricular section was missing. Schafer (1999) expressed that filling missing data with possible values is standard research practice. There is an assumption that the participants were not involved in co-curricular activities based on their lack of answering the questions. The researcher performed imputation using zero values in place of the missing data to include more participants in the study. One hundred thirteen

participants (out of n = 216) had missing values in the co-curricular section. Excluding these participants would remove over 50% of the data.

**Qualitative Data Sample**

Of the 216 participants, 43 first-generation students were interested in being interviewed in the survey. The researcher emailed the 43 students to schedule 40-60-minute interviews. A total of four participants volunteered for interviews. Another email was sent out two weeks after the initial reach out, and five additional participants signed up for the qualitative portion of the study. Out of the nine participants, only eight were used for the study. The discarded interview collected limited information due to the participant being an international student with a significant communication barrier, and she reported not experiencing the imposter phenomenon in college. The qualitative portion of the study explicitly measures first-generation experiences with the imposter phenomenon. Table 6 shows the interview participant demographics, including pseudonym names (to protect identity), gender, student classification, school type, and special notes.

**Table 6**

*Interview Participants Demographics (N = 8)*

| ***Pseudonym*** | ***Gender*** | ***Classification*** | ***School Type*** | ***Special Note*** |
|---|---|---|---|---|
| Anna | Female | Senior | Private | - |
| Elsa | Female | Freshman | Private | - |
| Judy | Female | Freshman | 2-Year | - |
| Kyle | Male | Freshman | 2-Year | Veteran |
| Meredith | Female | Freshman | 2-Year | - |
| Morgan | Female | Sophomore | Private | - |
| Tori | Female | Freshman | 2-Year | Non-Traditional Student |
| Stacy | Female | Freshman | Private | - |

A total of seven females and one male completed the interviews, with equal representation from the private school (4) and two-year community college (4). Special notes include any interesting information that was disclosed in the interview.

**Research Question 1 - Hypothesis One, Two, and Three Findings**

The researcher utilized descriptive analysis, independent *t*-tests, and an ANOVA to analyze this question. The null Hypotheses 1 through 3 directly relate to research question one:

Null Hypothesis 1: First-generation students do not experience the imposter phenomenon more than continuing-generation students. Null Hypothesis 2: There is no difference in the imposter phenomenon experience among first-generation freshmen, sophomores, juniors, or seniors. Null Hypothesis 3: There is no difference in the imposter phenomenon experience among first-generation students at a community college or private university. The null sub-hypotheses are:

- There is no difference in the imposter phenomenon experience among first-generation freshmen students at a community college or private university.
- There is no difference in the imposter phenomenon experience among first-generation sophomore students at a community college or private university.

The Clance Imposter scale determined the level of imposter phenomenon experience, comparing generation status, student classification, and institution type.

***Clance Imposter Scale Findings.***

The CIPS is a 100-point scale comprised of 20 Likert-style questions (from 1 to 5). A participant with a total score of 40 or lower means the participant has a low imposter phenomenon rating or few experiences with impostorism. Participants with

scores between 41 and 60 designate the participant as having moderate imposter phenomenon experiences; scores between 61 and 80 mean frequent imposter feelings. Finally, scores above 80 mean intense imposter phenomenon experiences (Clance, 1985). Table 7 demonstrates the overall frequencies related to the CIPS, separated by community college and private university students.

**Table 7**

*Frequencies of Categories of the CIPS – First-Generation Status*

| Category | First-Generation | | Continuing-Generation | |
|---|---|---|---|---|
| | *n* | % | *n* | % |
| Low Imposter | 3 | 3.2% | 2 | 1.6% |
| Moderate Imposter | 17 | 18.7% | 34 | 27.2% |
| Frequent Imposter | 36 | 39.6% | 49 | 39.2% |
| Intense Imposter | 35 | 38.5% | 40 | 32% |
| Total | 91 | 100% | 125 | 100% |

A total of 216 participants completed all 20 questions of the CIPS. Table 7 shows the imposter phenomenon frequency based on first-generation student status. The researcher performed a frequency analysis on this status and found similar results. The distribution of scores in the first-generation sample ranged from 38 to 96, with a mean score of 72.16 (SD = 14.76). In the first-generation sample, 3.2% of the respondents scored in the low impostor category (n = 3), 18.7% scored in the moderate impostor category (n = 17), 39.6% scored in the frequent impostor category (n =36), and 38.5% scored in the intense impostor category (n = 35).

Similarly, the distribution of scores in the continuing-generation sample ranged from 29 to 98, with a mean score of 69.90 (SD = 15.48). In the continuing-generation sample, 1.6% of the respondents scored in the low impostor category (n = 2), 27.2%

scored in the moderate impostor category (n = 34), 39.2% scored in the frequent impostor category (n = 49), and 32% scored in the intense impostor category (n = 40). The overall generation status frequency data suggests a slight difference between first-generation and continuing-generation student status, as approximately 6.9% of first-generation students have more frequent or intense experiences with the imposter phenomenon than their continuing-generation counterparts.

Despite the frequency data, the researcher found no significant difference in generation status using an independent sample *t*-test. The analysis revealed the first-generation imposter phenomenon scores (M = 72.16, SD = 14.76) were not statistically different from continuing-generation students (M = 69.90, SD = 15.48); t(69) = -1.08, $p$ = .138. At $\alpha = .05$, the researcher failed to reject the null hypothesis 1 using quantitative analysis and determined that first-generation students do not experience the imposter phenomenon more than continuing-generation students. Table 8 depicts the full results of the independent *t*-test.

**Table 8**

*Imposter Independent Sample t-tests by Variable*

| ***Variable*** | ***t-value*** | ***df*** | ***Two Sided p-value*** | ***95% CI*** |
|---|---|---|---|---|
| *First-Gen v. Cont. Gen* | -1.08 | 198.99 | .138 | -6.37, 1.83 |

**Table 9**

*Frequencies of Categories of the CIPS – First-generation and Classification*

| | Freshman | | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|---|
| Category | *n* | % | *n* | % | *n* | % | *n* | % |
| Low Imposter | 0 | 0% | 2 | 11.8% | 0 | 0% | 1 | 25% |
| Moderate Imposter | 8 | 13.3% | 5 | 29.4% | 4 | 40% | 0 | 0% |
| Frequent Imposter | 27 | 45% | 6 | 35.3% | 3 | 30% | 0 | 0% |
| Intense Imposter | 25 | 41.7% | 4 | 23.5% | 3 | 30% | 3 | 75% |
| Total | 60 | 100% | 17 | 100% | 10 | 100% | 4 | 100% |

H1 measured the difference among first-generation students based on student classification. A total of 91 first-generation students completed all 20 questions of the CIPS. Table 9 shows the imposter phenomenon frequency based on first-generation student classification—freshman, sophomore, junior, and senior. The researcher performed a frequency analysis on this status and found similar results. The distribution of scores among the freshmen sample ranged from 42 to 96, with a mean score of 74.42 (SD = 13.04). In the sample, 0% of the freshmen respondents scored in the low impostor category (n = 0), 13% scored in the moderate impostor category (n = 8), 45% scored in the frequent impostor category (n = 27), and 41.7% scored in the intense impostor category (n = 25). Similarly, the distribution of scores in the sophomore sample ranged from 38 to 89, with a mean score of 66.06 (SD = 17.19). In the sophomore sample, 11.8% of the respondents scored in the low impostor category (n = 2), 29.4% scored in the moderate impostor category (n = 5), 35.3% scored in the frequent impostor category (n = 6), and 23.5% scored in the intense impostor category (n = 4). The first- and second-year student categories were the most extensive samples collected due to their representation in the community college population.

The distribution of scores in the junior sample ranged from 44 to 93, with a mean score of 68.60 (SD = 16.15). In the sample, 0% of the respondents scored in the low impostor category (n = 0), 40% scored in the moderate impostor category (n =4), 30% scored in the frequent impostor category (n = 3), and 30% scored in the intense impostor category (n = 3). Scores in the senior sample ranged from 40 to 87, with a mean score of 73.32 (SD = 22.31). In the sample, 25% of the respondents scored in the low impostor category (n = 1), 0% scored in the moderate impostor category (n = 0), 0% scored in the

frequent impostor category (n = 0), and 75% scored in the intense impostor category (n = 3). The junior and senior categories were the most undersized samples because the four-year private school primarily contained this classification.

The overall classification descriptive analysis suggests a slight difference between student classification. The results of combining frequent and intense imposter experiences are interesting: freshmen (86.7%), sophomores (58.8%), juniors (60%), and seniors (75%). Freshmen presented as experiencing the imposter phenomenon the most. The junior and senior data is not as reliable with the small sample size.

The researcher completed a one-way Analysis of Variance (ANOVA) to identify differences between the four student classification types. Results revealed the Sum of Squares = 172.63, Mean Square = 57.444, df = 3, F = .246, and $p$ = .864. At $\alpha$ = .05, the researcher failed to reject the null hypothesis 2 using quantitative analysis and determined that different student classifications do not have different imposter phenomenon experiences.

**Table 10**

*ANOVA by First-Generation and Student Classification*

| ***Variable*** | ***SSQ*** | ***Mean Square*** | ***df*** | ***F*** | ***p*** |
|---|---|---|---|---|---|
| *Imposterism* | 35.149 | .799 | 44 | 1.168 | .302 |

**Table 11**

*Frequencies of Categories of the CIPS – First-Generation and Institutional Type*

| | CC Students | | 4-Year Students | |
|---|---|---|---|---|
| Category | *N* | % | *n* | % |
| Low Imposter | 2 | 3.6% | 1 | 2.9% |
| Moderate Imposter | 12 | 21.4% | 5 | 14.3% |
| Frequent Imposter | 25 | 44.6% | 11 | 34.4% |
| Intense Imposter | 17 | 30.4% | 18 | 51.4% |
| Total | 56 | 100% | 35 | 100% |

H3 measured the difference among first-generation students based on institution type. The researcher performed a frequency analysis on institution type and found similar results. The distribution of scores in the community college sample ranged from 38 to 93, with a mean score of 69.82 (SD = 14.33). In the community college sample, 3.6% of the respondents scored in the low impostor category (n = 2), 21.4% scored in the moderate impostor category (n = 12), 44.6% scored in the frequent impostor category (n = 25), and 30.4% scored in the intense impostor category (n = 17).

Similarly, the distribution of scores in the four-year private school sample ranged from 40 to 96, with a mean score of 75.63 (SD = 15.48). In the four-year private school sample, 2.9% of the respondents scored in the low impostor category (n = 1), 14.3% scored in the moderate impostor category (n = 5), 34.4% scored in the frequent impostor category (n = 11), and 51.4% scored in the intense impostor category (n = 35). The overall institutional frequency data does not suggest a difference between the community college and the four-year institutions.

After applying an independent *t*-test to analyze institution type further, the data revealed no total difference between institution types. However, there is a significant difference between community college freshmen and four-year private freshmen

university students. Community college first-generation freshmen student imposter phenomenon scores were statistically different from four-year private university first-generation freshmen students as indicated by the two-sided p-value of .007. At $\alpha = .05$, the researcher rejected the null hypothesis 3a using quantitative analysis and determined that community college first-generation freshmen students experience the imposter phenomenon differently than four-year private university first-generation freshmen. Table 12 depicts the full results of the independent t-test.

**Table 12**

*Imposter Independent Sample t-tests by Institution Type*

| ***Variable*** | ***t-value*** | ***df*** | ***Two Sided p-value*** | ***95% CI*** |
|---|---|---|---|---|
| ***Institution Type*** | -1.79 | 89 | .077 | -11.88, .626 |
| *Institution Type - Freshmen* | -2.89 | 34.17 | .007 | -16.69, -2.92 |
| *Institution Type - Sophomore* | -1.02 | 14.56 | .323 | -25.91, 9.128 |

**Research Question 3 - Hypothesis Four Findings**

The researcher utilized descriptive analysis and independent t-tests to analyze this question. The null Hypothesis 4 (including a and b sub-hypotheses directly relates to research question three: Null Hypothesis 4: The imposter phenomenon does not influence the academic engagement of first-generation college students? There is no difference in academic engagement among first-generation freshmen students at a community college or private university. The null sub-hypotheses are:

- There is no difference in the imposter phenomenon experience among first-generation freshmen students at a community college or private university.
- There is no difference in the imposter phenomenon experience among first-generation sophomore students at a community college or private university.

### *Engage Learning Index Findings*

The ELI is a 60-point scale initially comprised of 10 Likert-style questions (from 1-strongly disagree to 6-strongly agree). This scale was changed for the study to include "neither agree nor disagree," creating seven choices in total. According to Finstad (2010), 7-point Likert items accurately measure a participant's proper evaluation and are more suitable for electronic surveys. The scale has three components: meaningful processing, focused attention, and active participation. The focused attention has a reverse calculated score. Although there are no different levels of engagement, students with higher scores are more academically engaged. The researcher categorized the levels of engagement as low (1-23), moderate (24-46), and high (47-70). Tables 13 and 14 describe the frequencies of first-generation and continuing-generation status and first-generation freshmen and sophomores.

**Table 13**

*Frequencies of Categories of the ELI – First-Generation Status*

| Category | First-Generation | | Continuing-Generation | |
|---|---|---|---|---|
| | *n* | % | *n* | % |
| Low Engagement | 3 | 3.2% | 0 | 0% |
| Moderate Engagement | 35 | 38.5% | 51 | 40.8% |
| High Engagement | 53 | 58.3% | 74 | 59.2% |
| Total | 91 | 100% | 125 | 100% |

**Table 14**

*Frequencies of Categories of the ELI – First-Generation Status and Classification*

| Category | 1 GEN Freshman *n* | % | 1 GEN Sophomore *n* | % |
|---|---|---|---|---|
| Low Engagement | 1 | 1.7% | 2 | 11.8% |
| Moderate Engagement | 24 | 40% | 7 | 41.2% |
| High Engagement | 35 | 58.3% | 8 | 47% |
| Total | 60 | | 17 | |

Hypothesis 4 measured the influence the imposter phenomenon has on first-generation academic engagement. Frequency analysis on the first-generation and continuing-generation students in Table 13 establishes a baseline for the different experiences. In contrast, Table 14 answers the hypothesis by examining first-generation freshmen and sophomores' experiences and finds similar results. The distribution of scores in the freshmen ranged from 22 to 63, with a mean score of 47.37 (SD = 9.03). The distribution of scores in the sophomore ranged from 15 to 68, with a mean score of 46.29 (SD = 14.20).

After further applying an independent *t*-test to analyze institutional differences among first-generation freshmen and sophomores, the data revealed no total difference between institution types. However, there is a significant difference between first-generation freshmen with frequent or intense experiences with the imposter phenomenon (61+). Specifically, the data reveals first-generation freshmen with high levels of the imposter phenomenon vary from first-generation freshmen with low levels of the imposter phenomenon when it comes to the focused attention variable, $p = .018$. At $\alpha = .05$, the researcher rejected the null hypothesis 4 using quantitative analysis and

determined that the imposter phenomenon does influence academic engagement, especially in first-generation freshmen with the focused attention variable. Table 15 and Table 16 depict the full results of the independent *t*-test and comparison by level of impostorism.

**Table 15**

*Academic Engagement and Imposter Independent Sample t-tests by Student Classification*

| | 1 GEN FR | | | | 1 GEN SO | | | |
|---|---|---|---|---|---|---|---|---|
| **Category** | *t-value* | *df* | *Two Sided p-value* | *95% CI* | *t-value* | *df* | *Two Sided p-value* | *95% CI* |
| ***Academic Engagement*** | .159 | 27.085 | .875 | -5.277, 6.166 | -.795 | 11.941 | .442 | -20.015, 9.321 |
| *Focused Attention* | -.063 | 33.386 | .950 | -2.381, 2.238 | .456 | 9.556 | .659 | -6.741, 4.463 |
| *Active Participation* | -.510 | 29.364 | .614 | -1.948, 1.171 | -.448 | 13.879 | .661 | -4.744, 3.105 |
| *Meaningful Processing* | .525 | 29.277 | .604 | -2.207, 3.730 | -1.664 | 11.669 | .123 | -13.111, 1.777 |

**Table 16**

*Engagement Independent Sample T-Tests by Variable with High Imposter Phenomenon*

*61+ v. Low Imposters >61 First-Generation*

| ***Variable*** | ***t-value*** | ***df*** | ***Two Sided p-value*** | ***95% CI*** |
|---|---|---|---|---|
| ***Academic Engagement*** | -1.764 | 25.877 | .089 | -10.706, .817 |
| *Focused Attention* | -2.502 | 28.711 | .018 | -4.941, -.496 |
| *Active Participation* | -.913 | 25.754 | .369 | -2.358, .908 |
| *Meaningful Processing* | -1.046 | 28.459 | .305 | -4.439, 1.437 |

**Research Question 4 - Hypothesis Five Findings**

The researcher utilized descriptive analysis and independent t-tests to analyze this question. The null Hypothesis 5 (including a and b sub-hypotheses) directly relates to research question four. Null Hypothesis 5: The imposter phenomenon does not influence the co-curricular engagement of first-generation college students. The null sub-hypotheses are:

- There is no difference in co-curricular engagement among first-generation freshmen students at a community college or private university.
- There is no difference in co-curricular among first-generation sophomore students at a community college or private university.

***Co-Curricular Involvement Experience Index***

The CIEI measures the quantity and quality of co-curricular involvement. There is not a determined score for engagement, but students who score high are more engaged in co-curriculars. Quality of involvement is measured by a Likert-scale (5 = Always, 4 = Most of the time, 3 = about half the time, 1 = sometimes, 0 = never or not applicable). Quantity of involvement is measured by number of hours put into the organization (0-8 scale). Originally, the scale included a four-point scale, but the researcher changed this to a five-point scale to further differentiate the data. Furthermore, a question was removed from the quantity portion of the assessment for redundancy. The highest possible score for quality is 25, and the highest possible score for quantity is 14. The researcher categorized the levels of co-engagement as low (1-13), moderate (14-26), and high (27-39). The tables below describe the frequencies of first-generation and continuing-generation status and first-generation freshmen and sophomores.

**Table 17**

*Frequencies of Categories of the CIEI – First-Generation Status*

| Category | First-Generation *n* | % | Continuing-Generation *n* | % |
|---|---|---|---|---|
| Low Engagement | 55 | 60.4% | 73 | 58.4% |
| Moderate Engagement | 29 | 31.9% | 41 | 32.8% |
| High Engagement | 7 | 7.7% | 11 | 8.8% |
| Total | 91 | 100% | 125 | 100% |

**Table 18**

*Frequencies of Categories of the CIEI – First-Generation Status and Classification*

| Category | 1 GEN Freshman *n* | % | 1 GEN Sophomore *n* | % |
|---|---|---|---|---|
| Low Engagement | 39 | 65% | 8 | 47.1% |
| Moderate Engagement | 19 | 31.7% | 6 | 35.3% |
| High Engagement | 2 | 33.3% | 3 | 17.6% |
| Total | 60 | 100% | 17 | 100% |

Hypothesis 5 measured the influence the imposter phenomenon has on first-generation co-curricular engagement. Frequency analysis on the first-generation and continuing-generation students in Table 17 establishes a baseline for the different experiences. In contrast, Table 18 answers the hypothesis by examining first-generation freshmen and sophomores' experiences and finds similar results. The distribution of scores in the freshmen ranged from 2 to 30, with a mean score of 9.92 (SD = 8.61). The distribution of scores in the sophomores ranged from 2 to 32, with a mean score of 13.35 (SD = 10.75).

After applying an independent t-test to further analyze institutional differences among first-generation freshmen and sophomores, the data reveals considerable

differences between institution types. First-generation sophomores experienced a difference in co-curricular quantity, including the total hours per week and positions held. The first-generation freshmen data displayed significant differences in co-curricular quality, with all qualities having significance.

Despite the significance between classifications, there is no significant difference between first-generation freshmen and sophomores with frequent or intense experiences with the imposter phenomenon (61+). At $\alpha = .05$, the researcher rejected the null hypotheses 5a and 5b using quantitative analysis and determined a difference in co-curricular engagement among first-generation freshmen and sophomores at a community college or private university. Table 19 and Table 20 depict the full results of the independent *t*-test and comparison by level of impostorism.

**Table 19**

*Co-Curricular Engagement and Imposter Independent Sample t-tests by Classification*

| | 1 GEN FR | | | | 1 GEN SO | | | |
|---|---|---|---|---|---|---|---|---|
| *Category* | *t-value* | *df* | *Two Sided p-value* | *95% CI* | *t-value* | *df* | *Two Sided p-value* | *95% CI* |
| ***Co-Curricular – Quantity*** | -1.929 | 30.222 | .063 | -1.732, 0.049 | -2.739 | 7.405 | .027 | -4.454, -0.351 |
| *Hours per Week* | -2.030 | 32.803 | .051 | -1.478, 0.002 | -2.403 | 7.948 | .043 | -2.751, -0.055 |
| *Positions Held* | -.915 | 25.949 | .369 | -0.335, 0.129 | -2.646 | 7.000 | .033 | -1.894, -0.106 |
| ***Co-Curricular – Quality*** | -3.911 | 28.947 | <.001 | -13.478, -4.221 | -1.740 | 11.165 | .109 | -19.862, 2.307 |
| *Quality 1* | -2.990 | 29.378 | .006 | -2.419, -0.454 | -1.082 | 12.504 | .300 | -2.712, 0.907 |
| *Quality 2* | -3.739 | 24.847 | <.001 | -2.597, -0.752 | -1.732 | 9.070 | .117 | -3.425, 0.453 |
| *Quality 3* | -3.691 | 26.633 | .001 | -2.68, -0.764 | -1.221 | 12.949 | .244 | -3.231, 0.898 |
| *Quality 4* | -2.928 | 28.250 | .007 | -2.239, -0.396 | -1.507 | 11.980 | .158 | -3.466, 0.632 |
| *Quality 5* | -3.237 | 27.081 | .003 | -3.034, -0.68 | -1.230 | 14.960 | .238 | -3.835, 1.029 |

**Table 20**

*Co-Curricular Engagement Independent Sample T-Tests with*

*High Imposter Phenomenon 61+ v. Low Imposters >61 First-generation*

| ***Variable*** | ***t-value*** | ***df*** | ***Two Sided p-value*** | ***95% CI*** |
|---|---|---|---|---|
| ***Co-Curricular – Quantity*** | .876 | 28.139 | .389 | -0.559, 1.394 |
| *Hours per Week* | 1.107 | 30.473 | .277 | -0.338, 1.138 |
| *Positions Held* | .103 | 24.582 | .919 | -0.335, 0.37 |
| ***Co-Curricular – Quality*** | 1.244 | 30.458 | .223 | -1.912, 7.877 |
| *Quality 1* | 1.199 | 31.561 | .239 | -0.367, 1.416 |
| *Quality 2* | .963 | 32.328 | .343 | -0.438, 1.223 |
| *Quality 3* | 1.411 | 33.054 | .168 | -0.264, 1.46 |
| *Quality 4* | .817 | 30.073 | .420 | -0.545, 1.272 |
| *Quality 5* | 1.276 | 31.525 | .211 | -0.41, 1.782 |

**Research Question 1 - Qualitative Data Findings**

In addition to the quantitative analysis, the researcher used the following interview questions in the qualitative study to understand question 1:

- What does the imposter phenomenon mean to you?
- How would you describe your experience with the imposter phenomenon?
    - If experienced, are there any specific challenges you can think of?
- What coping strategies, if any, have you used to manage your imposter phenomenon feelings throughout your college experience?

The following section describes the results of the qualitative study.

### *Key Themes for Question 1*

Three main themes and eleven subthemes appeared from the literature, CIPS, and interviews. The themes were determined using a deductive approach. A deductive analysis allows the researcher to identify potential themes before the study based on literature and content analysis (Braun & Clarke, 2006). The researcher examined codes using a reflexive thematic analysis, where the researcher changed, removed, and added codes as the data was processed. Finally, the researcher utilized Braun and Clarke's (2006) thematic analysis framework to process the data. This method included six steps: familiarizing, coding, searching for themes, reviewing themes, defining and naming themes, and writing the report. The three themes in this research question were 1) perceptions of self, 2) perceptions of others, and 3) managing the imposter phenomenon.

**RQ1 Theme One: Perceptions of Self.** Participants selected for this portion of the study were first-generation and displayed moderate to frequent experiences with the imposter phenomenon, according to their results on the CIPS. Most participants understood their first-generation student status and how the imposter phenomenon affected them frequently. Kyle describes the imposter phenomenon experience as:

> It makes you less effective on pursuing whatever you're pursuing, whether you're studying psychology or physiology or just taking a math class. I personally didn't go to high school and this is my second semester of college and it's the culture shock alone makes me think I shouldn't be here.

Kyle felt he was ineffective in class and explained how he does not feel like he belongs on campus since he did not attend high school. Elsa provides another description of her imposter feelings about disbelief:

> I would say it's when you set your mind in a head space to where you kind of don't believe what is happening to you. Good or bad, honestly, is something that is like deserving. Personally, with academics, the fact that I got a decent number of scholarships because of my hard work while I was in high school. I'm still trying to wrap my head around the fact that I actually am smart. I do know what I'm doing sometimes.

There is an interesting contrast between these two students. Kyle has limited academic achievement, and Elsa describes her substantial academic accomplishments, but they both feel they do not belong. All eight participants fall into the at-risk or high-achieving category to some capacity yet still experience the imposter phenomenon. These perceptions developed into four subthemes 1) impostorism, 2) self-doubt, 3) high achievement, and 4) accomplishments based on external factors.

***RQ1 Theme One, Subtheme One: Imposterism.*** The researcher asked all interview participants about their experiences with the imposter phenomenon and if they could identify any challenges. Six participants resonated strongly, quickly identifying challenges they had experienced. Anna commented on her unique experience of being the only female in her major:

> I usually imagine my own experience in a classroom full of men, being the only woman. So that's kind of what it means to me. Just feeling like I almost have to project this false narrative about myself so that I feel like I

> can fit into the environment. I don't deal with a lot of direct sexism, but it's this feeling, this aura that comes over us women that we feel like we have to almost be masculine in order to feel heard, in order to feel like we fit into the environment.

Anna feels that she has to pretend to be someone else to fit into the system. She paints a vivid picture of having to be masculine to communicate with other students in the class. As a senior, Anna provided more context than the other participants. Many students confirmed that pretending to be someone else, or an imposter, has helped them in situations.

Two participants did not know about the imposter phenomenon before the study. Meredith explains:

> When I was answering the questions, I was just like, oh, I do that and I didn't realize that was maybe an issue that I have or something that I experience because I didn't even know it was a thing. But like the questions and stuff, I just kind of realized like, uh oh, I really do it a little bit.

Meredith was unaware of the imposter phenomenon but resonated strongly enough to continue with an interview. Tori had a similar experience stating,

> Whenever I was initially sent the message from you guys to participate in any of the studies, I really had no idea what was going on. I just kind of had to look into it and see really what you guys were even doing. I'm not used to taking studies or really participating in anything like this, so I had no idea what to expect.

It would be interesting to see how many people are unaware of the imposter phenomenon and if naming the issue would help with coping skills.

***RQ1 Theme One, Subtheme Two: Self-Doubt/Lack of Confidence.*** Consistent with the literature in chapter 2, all eight participants mentioned self-doubt. Clance and Imes (1978) described the imposter phenomenon experience based on self-criticism and duplicitous ideation. Judy mentions that she will not engage in the conversations unless she is confident in the answers. She states:

> I felt like that pretty much [for] anything and unless I was super confident and I already knew the answers. But now in college, I have a job at [School] in network hardware and IT and I still feel like, less so now that I've educated myself and I've become more confident, but I still feel like I cannot speak up because I am not knowledgeable enough.

Judy works in an IT department with mainly male coworkers. The narrative presents the idea that more confidence increases engagement. Kyle pushes through his self-doubt, but places a qualifier on his involvement by stating, "I told everybody forever don't listen to me, I'm an idiot. I didn't graduate high school. But I found that not to be true".

Aside from needing to feel confident in their knowledge and prior education, one participant doubts how long the achievements will last. Elsa states,

> I've started working out more and I'm getting a better shape and when part of me is like, okay, but how long is this gonna last? There's that nagging in the back of my mind that's like, okay, but this is probably just a dream. It's [the] not gonna last forever mentality that's been across a lot of aspects of my life.

Elsa does not believe she is deserving of her success and that it can collapse at any moment.

***RQ1 Theme One, Subtheme Three: High Achievement.*** The last piece to the perception of self is the intense experience of working harder to prove success. A few participants spoke about working hard to prove themselves to others. Judy explains her experience:

> I feel like I've always been super academically inclined. I've always wanted to prove myself through academics. I thought that was the only thing that made me important or likable per se. I was in a band and I would take like really good classes and I'd have to get a grade or I'd feel just bad about myself and I put a lot of self-worth into that.

Kyle supports this feeling by stating, "I intellectualize everything and prove things to myself." Both participants continue to describe how important it is for them to succeed academically.

**RQ1 Theme Two: Perception of Others.** Even more remarkable than self-doubt, participants frequently mentioned the perception of others in all eight interviews. Several studies in chapter two highlight three subthemes: comparing to others, negative evaluation of others, and belonging. The Langford and Clance (1993) study specifically found the imposter phenomenon, fear of failure, fear of negative evaluation, and perfectionism related to each other. Additionally, belonging became a critical component of the perception of others. This challenge is not unique for first-generation college students as many reports lacking a sense of belonging, no doubt exacerbated by the imposter phenomenon (Longwell-Grice et al., 2016).

***RQ1 Theme Two, Subtheme One: Comparing to Others***. Although a high-achieving student, Morgan still compares herself to her classmates. She states, when asked to identify specific challenges with the imposter phenomenon:

> Well, I think definitely in my major. I'm not really well-known in my major. I do a lot of other things that people are like, oh, I know [Morgan]. But in my major specifically, I feel a lot of imposter syndromes. I know a lot of them are really smart and they're doing a lot of organizations involving behavioral sciences and they are making those connections. Sometimes [at my school], everyone is super smart and you can feel like maybe I just got here by luck of draw or something like that.

Morgan feels inadequate in academics because she perceives that everyone at her school is more competent than her. She equates the imposter phenomenon with notoriety in her major. This information is interesting because she is over-involved in her student organizations.

Kyle shared his experience getting back into school after a long hiatus, comparing himself to students who just graduated high school. He states,

> I hadn't been to school since I was, we'll see 2005 and I didn't complete eighth grade. I'm learning a lot of information for the first time ever. Some of it to me is profound. But it's information that other people already have.

Kyle needs to catch up to his peers and is overwhelmed by the transition. There is a significant gap in his learning experience; many others are ahead of where he wants to be.

Stacy offers a different comparison as a commuter student when most students live on campus.

> I'm a commuter, so I don't live on campus. I also am like a collegiate athlete and I work as well, so I don't really have a lot of free time to have that college experience what most college kids get to have in my opinion.

She does not have the same experience as her peers and misses out. Stacy expands on the feeling: "Many kids can share dorm rooms and make friends that way. I don't have access to do that." There is a fear of missing out on the experiences the other students get to have while living on campus.

***RQ1 Theme Two, Subtheme Two: Belonging.*** Along with comparing other people's experiences, three participants articulated a sense of belonging as a strong influence. Anna continued to speak about her involvement as the only female in her academic program:

> I'm in [a faculty member's] physics class and we all sit in a circle to discuss our findings and the evidence that we conduct during class time. And it's very difficult to feel like I can engage because none of the men will make eye contact with me. They usually address each other and not me. And when I'm put into small groups with them, they check each other's answers. They look towards each other, but I'm kind of on the outside, so I have to force myself to interject to feel like I'm being heard.

Anna does not feel like she belongs in the class because she must force acknowledgment. Judy compares herself to others in conjunction with belonging by stating, "I didn't get to shine. I didn't get to feel comfortable in the position I was in because I didn't belong and

I wasn't as good as everybody else. This experience was a reoccurring theme throughout all high school."

Morgan, a resident assistant, takes it a step further by analyzing how she can keep up with her overall schedule.

> Working towards goals, setting goals, seeing things accomplished. So, like [my RA program], it was an idea, it was like a concept last year, but seeing it in person really affirmed my thought that I belong here and that I'm doing good. I guess making a difference.

She gained confidence from the success of her event, which increased her sense of belonging on campus.

**Theme Three: Managing the Imposter Phenomenon.** The last part of the interview asked what coping skills participants used to manage the imposter phenomenon. This information is a critical component in understanding the imposter experience. Three subthemes developed from the interview questions: avoidance, processing feelings, and mental health.

***RQ1 Theme Three, Subtheme One: Avoidance.*** Anna explains in detail her experience as the only female in her program. When asked how she copes, she states: "I kind of just shut it away. I don't acknowledge it." Anna avoids processing the imposter phenomenon to push through her frustrations. She wants to give up if she thinks about the issues. Her thoughts on the experience:

> And I think there's a lot of people like me out there who throw their hands in the air and they're just like, okay, I'm gonna just completely put in half the effort because that's what I feel like that's being put into me. I think

> that's what a lot of women do. Then they eventually give up and they just drop the major entirely or drop whatever education they're actually trying to pursue as a consequence.

***RQ1 Theme Three, Subtheme Two: Processing Feelings.*** A few participants reconciled their imposter phenomenon experience by internalizing and externalizing their feelings. Morgan likes to process feelings through the affirmation of others.

> Affirmation from the people close to you, like definitely getting affirmation from people in the groups that I'm in that like, you're not doing bad, you're doing great, this is your first year. And you really like, you're not behind the curve. Cause sometimes I can feel like behind the curve I sense of like my major. Cause I only had one class in my major last year, so I was doing our [general education] credits. Being told by people my major, like, hey, you're on the same track as me.

Tori also processing feelings with her significant other, stating:

> After I had my last baby, I ended up with postpartum depression. My mind was already a bit of a battlefield. I talked to my partner quite a bit. He's probably sick of hearing me, but I have to be able to talk to somebody, otherwise I will drown myself for sure.

On the other hand, Elsa processes her feelings by externalizing her thoughts through journaling.

> So far, I've done a lot of personal journaling. I found that to be very helpful, like putting these thoughts on paper. I actually have a notebook that is about halfway full, and I've decided I'm going to try to fill it up by

> the end of the semester and then burn it because that specific journal is just for all my negative thoughts. Like, oh, I didn't like the way that my hair looked today, or I felt I should have known the answer to this question on this test, or I knew the answer and I just felt really dumb. And if I ever used words like dumb or stupid, I try to save them for that notebook. That way when I'm finished with it, one, I can go back and reflect, be like, okay, I actually wasn't there was a lot of other stuff that was going on, or just going back and reflecting on it.

Both methods assist these participants in overcoming their negative feelings. Morgan seeks guidance from others to reaffirm her place in school. Positive comments encourage her to continue pushing through her fears. Elsa has difficulty internalizing the negative thoughts and must get them on paper before they affect her performance.

***RQ1 Theme Three, Subtheme Three: Mental and Physical Wellness.*** The last subtheme in this section is mental and physical wellness. Two participants commented on how the imposter phenomenon produces anxiety. Judy described how medication has helped her manage her anxiety and impostorism:

> I'm actually on anti-anxiety and antidepressants and I can just say that has worked extreme wonders. I think imposter syndrome is worse with anxiety. I have become so much more confident and so much more in myself by not caring what people think about me, which is like [the] number one thing that causes me anxiety. And since I don't care, I'm creating bonds with people.

Judy can create strong connections with people because of medication. Her negative perception of others decreased exponentially, allowing her to feel belonging. Tori and Kyle speak on the benefits of physical health. Tori explains:

> One of the biggest things that's gonna sound super crazy is exercise helps with near everything. There's a girl in one of our classes who will actually run around campus like two or three times and do laps before she takes any tests. And she says that helps so much.

Kyle confirms that physical health improves his mood by asserting, "I have to take a break and [do] breathing exercises and [take] cold showers to shut down my sympathetic nervous system." Tori and Kyle stated that their symptoms would worsen without prioritizing their physical health.

**Research Question 2 - Qualitative Data Findings**

None of the quantitative data measured the resources needed to support first-generation college students experiencing the imposter phenomenon. The qualitative data contains three questions about resources:

- What resources have you accessed at your school for you to be successful? Are they any missing resources?
- What messages have your family and/or support system provided you about being successful?
- What have you found to be helpful when it comes to combating the imposter phenomenon feelings?

Results from the qualitative studies are described in the next section.

### *Key Themes for Question 2*

Support for the imposter phenomenon has increased over the years, with programs such as California Technology and MIT debunking belonging myths, identifying IP characteristics, and general support programming (Cokely et al., 2013). However, further support is needed, and this study provides context to what benefits students struggling with IP. Two main themes and three subthemes appeared from the literature, CIPS, and interviews. The two themes in this research question were 1) support for students experiencing the imposter phenomenon and 2) resource challenges.

**RQ2 Theme One: Support for IP.** Participants identified several resources on and off campus that they used to combat the imposter phenomenon. Support is critical to increasing student success, especially for first-generation students who already feel behind. The earlier students find support, the stronger their chances to succeed (Engle et al., 2006). Two subthemes developed from the interview questions: institutional support (faculty and staff) and personal support (family and peers).

***RQ2 Theme One, Subtheme One: Institutional Support.*** When asked about what resources on campus the participants utilized, an overwhelming amount stated that their faculty had helped them the most. Answers ranged from answering simple questions to getting connected to academic organizations. Kyle replied on his experience at the community college, “on occasion I'll ask [my professor] up here is the director of [a department]. She's super helpful and approachable. If I have like a really hard question, I'll ask one of them.”. Kyle built trust with a department director and feels comfortable going to them for questions, even if it does not pertain to the class. Judy also has a similar experience, stating, “And then my teachers help a lot. Like they're really open and they're

helpful and like teachers just want to help. And that's exactly what the ones at [my school] have done for me."

Similar experiences occur at the private college as well. Elsa comments on how understanding the professors are about her situation, explaining:

> I feel like the only ones that I've really reached out to are personally my professors…And just having open communication with my professors when something does come up. Like a couple weeks ago, I had to put my dog down and all my professors were like super open. [They stated,] 'Yeah, don't worry about coming to class. I've been there. It happens, I'm so sorry. If you need anything, if you need an extension on these assignments, just let me know and I'll gladly grant it to you.'

Elsa feels that when the professors understand her situation, she can positively relate to them. This connection allows her to come to them more for support. Similarly, Tori appreciates her professors' flexibility in letting her ZOOM into class if she cannot attend physically.

> Zoom has [been] super convenient for me for any time. I haven't been able to actually come into class. There's three of my professors who have been willing to let me attend through there so that I'm still getting to see everything that's going on. I still get to hear the lecture. Also [other professors] have YouTube channels that have all of their lectures posted with hundreds of examples. I can always open up their pages and watch everything there.

Aside from faculty, participants mentioned career services and advising as resources used on campus. Stacy states:

> They're the ones that help you with your resumes and like a career coach thing. And you know, my academic advisors have done a lot of that. And I think that's pretty much it. I just try to keep in communication with a lot of advisors.

Morgan validates Stacy's experience by affirming, “I got my resume looked over there a couple times, made appointments. I made appointments with academic advising”. There were other mentions of staff from this question, but the overwhelming support comes from the faculty.

***RQ2 Theme One, Subtheme Two: Personal Support.*** Aside from institutional support, personal support from family or peers was instrumental for first-generation students in this study. Anna speaks on her mother's resilience and how it encourages her to push through the challenges of being the only female in her program. When asked about what contributes to her success, she states:

> My mom, she grew up a single mother, well, I grew up with a single mother. She was adopted from North Korea, somehow made it out and she put a lot of work into work her way up into this business. And she's the kind of the reason why I'm even here today. So, I would say my mom is the biggest contribution.

Kyle also attributes family to his success as he convinced his brother to join a medical program where he lives. Kyle mentions when asked about support:

> The biggest thing I could say about that is my brother. I talked him into going to medical school where he lives and that's been kind of like iron sharpens iron type thing, keeping each other on track and focused on getting through school.

Anna and Kyle have family members who empower them to continue their studies. Elsa mentions how she uses her peers as support:

> I do use my peers a lot. I will say that that's another resource that I've been reaching out to. Within the first week of school, I made friends or acquaintances with at least one person in each of my classes. And that way if I was confused on something, I could just message them or text them and be like, hey, I was working on this assignment. What are you doing for this? Cause I got a little confused on this part, for example.

Anna relies on her peers when expressing her concerns about the department. She states, "What I find that helps me a lot is leaning on other women in the biochemistry department. I talk to them a lot about their experience. We share those experiences and we just talk ourselves through it."

**RQ2 Theme Two: Challenges with IP Resources.** Despite the strong support from faculty, staff, family, and peers, participants identified several challenges. It is essential to note challenges to address these issues and decrease barriers for first-generation students accurately. Two subthemes developed from the interview questions: false support and lack of listening ear.

***RQ2 Theme Two, Subtheme One: False Support.*** When asked about support, a few participants described experiences with family members who provide false support

or support that does not have much value. This feeling could be due to family members not understanding the college experience and the complex challenges of navigating college. Elsa comments,

> My closest relatives haven't done a whole lot, honestly. They're just kind of like, 'you're on your own. Good luck. You got this.' That's about it. And then I have like cousins and stuff who I've never even met, like commenting on my mom's Facebook's post that it's like, 'oh my gosh, I'm so proud of you. You're so smart. Like, you're doing so well.' And then I'm just like, Thanks, I think, I don't know you, but thanks.

Elsa has many people who comment on social media, but it feels like they don't understand what she is experiencing. Anna has a similar experience: "It's the same old, same old push through press on you've got this, you're almost done. But to me that should not be my experience. I should have this desire to press on, but it's very challenging." Both participants wish there were more substance behind the support to help them in their college experience.

***RQ2 Theme Two, Subtheme Two: Lack of Listening Ear.*** Aside from false support, participants reported missing someone to listen to their concerns or to help them work through issues. When asked what was missing, Kyle responded, "For me, the greatest asset I can get is a sounding board to talk through ideas and concepts and I don't see how that would be replicated as a universal resource for people to use." Kyle does not feel anyone at the institution understands his experience.

Although faculty was the most mentioned support system, there were challenges. Meredith stated,

> I don't really think there's that personal connection with college teachers because they have like a million students and they're busy all the time and like as soon as class is over, you have to get out. I feel like there's that piece missing that I wish was there.

Meredith explained how challenging it is to communicate with her professors at the community college when there is no personal connection. Anna speaks about the lack of listening ears in her program:

> One of the biggest resources I feel that I lack at [my school] is this listening ear, this desire to care about the physics department and the physics students who want to succeed but can't because there seems to be no interest or desire. Being the only woman, the times that I have spoken up about it, I've actually been told by men in the department that I'm just very emotional. I think the resources that we're lacking is just the listening ear. That's the biggest part.

Anna is frustrated about her experience. Anna attempted to address issues, but her concerns were minimized as a woman and told by the men in the department that she was emotional.

**Research Question 3 - Qualitative Data Findings**

In addition to the quantitative analysis, the researcher used the following interview questions in the qualitative study to understand question 3:

- How do you define academic engagement?
- What are your academic goals? Do you think you will achieve these goals? Why or why not?

- Describe a time when you did not feel that your academic work was good enough before submitting your work or receiving feedback?
- Tell me about an academic experience or group project when you felt that you were not prepared.
- Has the imposter phenomenon affected your academic engagement (studying, group projects, class interactions)? Please describe.

Results from the qualitative studies are described in the next section.

### *Key Themes for Question 3*

The imposter phenomenon literature is limited when explaining the IP effects on academic engagement. Academic engagement is consequential in student retention (Astin, 1999; Tinto, 1975). This study asked students to define academic engagement in their terms and identify areas in which the imposter phenomenon has influenced it. Three main themes and eleven subthemes appeared from the literature, CIPS, and interviews. The three themes in this research question were 1) defining academic engagement, 2) barriers to academic engagement, and 3) characteristics of students with the imposter phenomenon on academic engagement.

**RQ3 Theme One: Definition of Academic Engagement.** Academic engagement has multiple definitions (Alrashidi et al., 2016). Skinner et al. (2009) described it as "The quality of students' participation or connection with the schooling endeavor and hence with activities, values, people, goals, and place that comprise it." Lamborn et al. (1992) emphasized skill development by stating, "Students' psychological effort and investment toward learning, understanding, or mastering the skills, crafts, or knowledge that the schoolwork is intended to promote." Despite the various definitions, it is imperative to

understand the student's definitions to learn how their imposter phenomenon experience impacts them. Two types of definitions appeared from the interviews: collaborating with others and engaging with the content.

***RQ3 Theme One, Subtheme One: Collaborating with Students.*** A few participants defined academic engagement as going beyond the study to collaborate. Anna described, "Academic engagement is based on collaboration. It's the spreading of your ideas, hearing one another out, participating in conversation and experimentation". Judy talks about forming a study group or club. She states, "obviously studying at home, outside of school, not just participating in class but doing it at home. Maybe forming a study group, getting in clubs." Both participants focus on interacting with others as academic engagement.

***RQ3 Theme One, Subtheme Two: Engaging with the Content.*** Other participants identified academic engagement as engaging further with the content, beyond completing assignments or taking tests. Morgan mentions, “Academic engagement is beyond like grades or scores. I think it's really being attentive in class. Not only taking notes, but honestly just engaging with the professors and engaging with the material and the content that you're learning.” Meredith confirms, but speaks on the different methods of studying, “Doing everything that you can to take in the learning like how I did different methods of studying and doing everything that you can to really soak up what you're learning about.” Finally, Kyle validates both participants by stating “I would say integrating yourself in the process that is getting an education”. Each one of these participants values academic engagement and places emphasis on going beyond completing assignments.

**RQ3 Theme Two: Barriers to Academic Engagement.** The literature identifies several barriers students face with the imposter phenomenon. Many of these barriers emerged as the data from the interviews were analyzed, including negative evaluations from others, lack of belonging, fear of failure, and self-doubt. The researcher addresses self-doubt as an overall influence of IP earlier in the chapter and does not expand in this section, although it does impact academic engagement.

***RQ3 Theme Two, Subtheme One: Belonging.*** Belonging is vital for retention in the research, especially with first-generation college students. It is interesting how the sense of belonging can alter an important choice, such as a college major. Judy explains:

> I was in network hardware and security, cybersecurity, and funny story, I was in that because I was affected by insecurity, based on not thinking I belonged and I couldn't do anything more. But ever since I was a child, I wanted to be a wildlife biologist, and I'm transferring to [another school] to pursue that career.

Judy pushed herself to become successful in the field, gaining an internship and respect from many of her peers.

Although Judy has overcome her fear of not belonging, a few other participants have been unable to do this. Anna is involved in a large organization on campus but is reserved because she does not feel a strong connection. She exclaims:

> I almost like socially isolate myself a lot of the times. I don't like participating in a lot of activities. Surprisingly, I'm in a [large organization], but I'm very quiet in there. I think one of the biggest reasons why they don't feel as connected to [my school] because of the imposter

> phenomenon. I don't feel this excitement all the time to be there. Just because I don't feel like I fit in entirely.

Kyle shares a similar experience as a non-traditional veteran student by answering how the imposter phenomenon has influenced his academic engagement. He answers:

> Group interactions for sure. It took me eight weeks to really even talk to anybody around me. Part of that's due to I'm 32 and everyone I'm going to school with is like 19, there's social [awkwardness] there. Not sure if I'm thinking about the things the right way or then I go on to rabbit holes, like really bad.

***RQ3 Theme Two, Subtheme Two: Negative Evaluation of Others.*** Perception of others is another common factor among students experiencing the imposter phenomenon. Many imposters feel people will suspect their fraudulence, exposing the imposters for who they are, even if there is little evidence supporting it. When asked if the imposter phenomenon has impacted academic engagement, Anna replies:

> I'm very reluctant to reach out to my classmates because I feel already very intimidated by them. They don't even address me in class more than half the time. So, when I ask for help, I feel like I'm almost reestablishing that narrative that I'm not smart enough to be in that class in the first place.

Anna did not want to seem unintelligent to her peers and limited her class interaction.

> Judy places importance on preparation for class discussions. She responded:
> I typically put in time into my projects and especially if they are group projects. If people are holding me accountable, I'm not going to not do it.

> I'm not going to be the slacker that asks the day of or forgets about it.
>
> That's the worst thing you could ever do is show people a fault.

To Judy, showing other people your faults is the worst someone can do, especially with imposters. Anna and Judy are concerned with how others think of them and their performance. So much so that they do not want to reach out for help or come to class underprepared.

***RQ3 Theme Two, Subtheme Three: Fear of Failure.*** Fear of failure is another component of the imposter phenomenon discussed in the literature. A few participants discussed this issue, but Tori spoke the most about it. Tori opens up about her going to the community college:

> The only reason I chose to go to school is just because I know there's a lot that goes with opening up a business, but I personally do not want to mess that up. So, I don't want to go in there and open up this big old thing and think I have this great idea, and then just not know the fundamentals of functioning, anything like that and failing it out because that would suck pretty bad.

Tori does not need to attend school for her goals, but she does fear that she will fail without it. The fear drives her to get an education.

**RQ3 Theme Three: Characteristics of Engagement.** A piece of understanding the imposter phenomenon is identifying imposter characteristics. By doing this, the support systems can encourage positive traits and provide strategies to manage negative traits. The researcher identified six characteristics in the study: high-achieving, perfectionism, prioritizing effort, underprepared, and resilience. Participants exhibited many of these traits together. Rarely did a participant exhibit only one trait entirely.

***RQ3 Theme Three, Subtheme One: High Achieving/Over-compensation.*** Three participants identified as high-achieving students. Stacy comments on how her hard work has helped her succeed in academics. She affirms:

> Because I've always enjoyed school. It's always been my thing and I was pretty gifted. I had a 3.8 for most of my high school career. I put in the work. I put in the hours. I study. I do my work. You know what I really want? Dedication and wanting something can get you long way.

Elsa goes further in addressing how she constantly tries to learn new things. She will find out quickly if there is something she needs to learn. She states:

> There are often times where my friends and I will be talking about something and I'll be like, oh, what is that and I'll get on Google really quick and read 15 articles and watch 12 videos and then I'm an expert at whatever this was now, because now I know everything about it.

Morgan also identifies as high-achieving, but instead of seeking new information, she increases her class engagement to not seem like an imposter. She mentions her experience:

> I talk a lot in all of my classes. A lot of times it’s really quiet, people don't really answer. People aren't like, I would say, academically engaged. And so, in that way I think I combat feeling sometimes like an imposter by maybe overcompensating in the classroom with my dialogue and trying to engage with the other students as well. So, it's a good thing and a bad thing, I think.

Like Morgan, Judy increases engagement by focusing on perfection to ensure no one suspects her as an imposter.

> Every single thing needs to be read down to the exact detail. Every key word needs to be memorized. Every definition needs to be memorized. And if that isn't done, I feel unprepared, which is pretty much every single time, every single chapter. If I don't do it perfectly, it's unprepared.

***RQ3 Theme Three, Subtheme Two: Underprepared***. Opposite the high-achieving students, a few participants fell into the underprepared categories. Elsa reflects on her experience recently where she procrastinated on an assignment:

> I had a midterm paper to do, and I put it off and had a limited time. I had about two days to look over it and edit it, and I spent every spare moment I had been working on it because it was a topic that I felt I wanted to accurately portray my opinion and my thoughts on the matter.

Although Elsa commented prior on learning new things, she contradicted her high-achieving behavior in this comment. This information suggests that the imposter phenomenon characteristics are not dichotomous; instead, the same person can exhibit multiple traits.

Anna demonstrates another type of underprepared student that is not procrastination. When the material is too challenging to comprehend, it can make students feel underprepared. Despite Anna's efforts to study the material, she recounts her struggle when asked if she has felt underprepared:

> Yeah. Almost all the time. We have group projects weekly and I'm not the only one a lot of us walk into and they're confused. I mean, its physics,

> obviously everyone's always confused. This week for example, we were studying magnetic fields and I did not have any idea walking in there what the heck I was doing.

***RQ3 Theme Three, Subtheme Three: Prioritizing Effort.*** There is a middle characteristic between high-achieving and underprepared students. These students are strategic in their academics by prioritizing their efforts to where they use just enough energy to reach the desired outcome. Morgan describes,

> I know that I don't necessarily put a hundred percent into everything that I do and I probably should in terms of schoolwork, but it's just like I never really had to, cause I kind of understood things…I know that he will think it's fine. I'll get a decent grade on it.

Similarly to Morgan, Stacy responds when asked about her effort:

> Because it wasn't a class that I had been prioritizing due to the fact that it's not really necessary for my degree. It's an elective. I just didn't really put in as much work as I did for the other classes in their mid-terms.

Morgan and Stacy put in less effort so that they could use energy elsewhere.

***RQ3 Theme Three, Subtheme Four: Resilience.*** Finally, one of the essential traits identified among the participants is resilience. When asked if they would achieve success, most participants spoke about their strength to push through the imposter feelings. Although Anna spoke in detail about her negative experience in her program, there was a firm resolve. She said,

> I'm always going through it every single day of my life and it's super discouraging and you don't realize it until you actually start to have these

> really dark thoughts about giving up and quitting and changing your major to something else that's easier because it's just so difficult. I feel like this is something that I can push through because I convince myself that this is like a protest. That this is something that I can do. If I get through it, then I can say I did something that a lot of other women didn't, or a lot of other men didn't even do.

Kyle attributes his success to the past trauma he has already experienced. Kyle states,

> Not to be graphic, but like, I've literally proven you have to kill me to get me to stop moving forward. That's been somewhat difficult for a lot of people to do. I've been to some pretty dark lows, but I always get up and I keep going. That's the one thing that I think it's gotten me here anyway.

Kyle can overcome his fears about being a non-traditional student because his military experience has prepared him for complicated things. Judy relies on her prior accomplishments to dispel her negative feelings. When asked if she would be successful, she replied,

> I honestly have proven to myself that I can. I knew nothing about [IT]. I had never seen the inside of a computer. I didn't really know what a motherboard was. I didn't know what a switch was. I have proven to myself that I can jump in somewhere that I have no clue what was going on ever. And I have done that.

**Research Question 4 - Qualitative Data Findings**

In addition to the quantitative analysis, the researcher used the following interview questions in the qualitative study to understand question 4:

- Have you ever struggled to get involved in an organization or leadership role? Why or why not?
- Do you see yourself as successful outside of your classroom experience? To what do you attribute to your success?
- Has the imposter phenomenon affected your co-curricular engagement (student involvement, outside-class interaction, events). Please describe.

***Key Themes for Question 4.***

Many correlations exist between academic engagement and co-curricular engagement. According to the participant responses, the imposter phenomenon strongly influences co-curricular participation. Two themes emerged from the research question: 1) barriers to co-curricular engagement and 2) positive indicators of involvement.

**RQ4 Theme One: Barriers to Co-Curricular Engagement.** As with academic engagement, many of the barriers affected co-curricular engagement. These included: a lack of belonging, negative perceptions of others, and fear of being defrauded. Support was addressed in managing IP earlier in the chapter but had such a considerable influence on co-curricular engagement that the researcher included it in this section.

***RQ4 Theme One, Subtheme One: Belonging.*** Belonging is a critical factor in co-curricular engagement. According to the study, participants who do not feel a sense of belonging are less likely to get involved. When asked if Judy had ever struggled to get involved, she responded:

> It just comes back to that feeling the self-worth thing. Like, am I good enough for this position? Are people going to think that I belong here? And then [in] a leadership role. If you don't feel like you belong

> somewhere, do you really think you could be a leader somewhere? The idea of having a management position is actually terrifying. That's definitely how it affects me is just feeling insecure and just how much experience I've had and not doing it before.

Judy does not think she can get involved, let alone be a manager, because of her self-doubt. She will need to feel a strong sense of belonging before increasing her involvement.

Tori speaks on her non-traditional status, comparing herself to other students. She states:

> I fought [my professor] on being a part of his whole little group out there and it's literally just because I expect like this [high] level, and I am definitely not the average student. I've done a whole lot of crazy stuff in my life. Whenever I was a kid, I've been in jail. I'm a totally different person than a lot of my peers around there. And I feel like they expect people like everyone else. And I know I don't necessarily fit in that category.

Despite her fears, Tori continues to inform the interviewer how she eventually got involved in the organization. The main challenge was understanding that it was ok to be different, and the professor welcomed all perspectives.

***RQ4 Theme One, Subtheme Two: Negative Perception of Others.*** Another reoccurring theme in the interviews was the negative perception of others. The thought of other people viewing the participants as imposters was a significant deterrent for co-

curricular engagement. Although Morgan is an accomplished president of a large organization, she still experiences imposter feelings. She replies:

> As president of [my organization], sometimes I feel like I'm making the meetings boring. Like, are we talking about things you want to talk about? Am I being a good leader? Am I delegating? A lot of self-doubt in that way.

After mentioning the success Elsa has had connecting with her teammates, she also fears negative evaluations from her peers. She affirms,

> Even now, occasionally I'll still have those thoughts in the back of my mind when everybody's talking and I'm just off to the side. Do these girls actually like me, or are they just pretending to because we're teammates? And so, I think that's been the biggest impact on extra-curricular activities, honestly, is just that thought of I don't fit in and so I don't deserve to be here.

Elsa's negative perception leads to self-doubt and decreases her sense of belonging on campus.

***RQ4 Theme One, Subtheme Three: Fear of Being Defrauded.***

One of the greatest fears in the literature is the fear of being defrauded. Imposters feel they have not earned their status, and when others point out their inadequacy, it can cause anxiety. Judy support this by stating,

> I was actually invited to attend [an organization's] opening meeting and I felt like if I were to attend somebody was going to ask me a question [that] I wouldn't be able to answer. I would look like I didn't belong, honestly.

> It's a lot of pressure to have on me and that was really scary. And then that anxiety kept me from actually attending something where I could have met a lot of really cool people.

Anna loses her connection by pretending to be someone else to fit in. Although she is afraid of people finding out, she continues to put on a façade to meet other people's expectations. She says:

> I feel like I almost have to fulfill this expectation in these co-curricular activities that I'm the star of the show, but in reality, I'm just absolutely not. And I don't feel connected to that degree whatsoever because of the imposter phenomenon. I struggle a little bit. There are two different perceptions of me going on.

**RQ4 Theme Two: Positive Indicators of Involvement.** The final theme identified in the study is positive indicators of involvement. Motivation and support are critical factors in increasing co-curricular involvement. Most career accomplishments motivated the participants. The support varied but primarily came from peer or coworker interactions.

***RQ4 Theme Two, Subtheme One: Motivation.*** The significant connection among participants with motivation was their success in their careers. There was a unique juxtaposition between co-curricular involvement at school and their work. Participants reported excelling in their work and not being afraid to assume responsibility. Anna reported,

> I'm a [employee] at a title company here in [town]. And I feel very connected there. I've grown the department over 200% in the last year, and I'm actually the manager of that department.

Elsa also comments about her ability to change personalities at work:

> I've always tried to have a very separate personal and work life, and so I feel like when I go to work, I can flip on a switch and I can become this different person than I am outside of school. The fact that I'm earning money and then I have the opportunity to earn more money, like based on my experience or based on my performance, I think that's definitely a driving factor.

Both students can thrive in their work environment but struggle to connect in school.

***RQ4 Theme Two, Subtheme Two: Support.*** Support is crucial for co-curricular involvement and the resources needed to manage IP. Stacy recounts her experience with her athletic team:

> I don't really feel like it affects it too much. My team has been very, very accepting of me and tries to include me on everything. Besides the fact that I just feel like I can't attend as much as they do, I feel like they still include me in a lot. I don't really feel like an imposter on the team. I do feel that it's one thing that I belong.

Stacy is unable to attend many co-curricular events because of her commuter status. However, she still feels a sense of belonging because the team includes her. Judy finds support from her coworkers. She states:

> I've had great examples, kind of like mentors. They're not technically mentors, but they feel like mentors to me. My coworkers that have gone to college, that have experienced a little bit more life than I have, and they have really paved kind of this way.

These students rely heavily on their support systems; without them, they would not be as involved due to their imposter fears.

**Summary**

The research revealed several important outcomes from the quantitative and qualitative studies. The first finding was that there was a difference in imposter phenomenon scores among first-generation freshmen at the community college and first-generation freshmen at the private university. The researcher failed to reject the null hypotheses for the remainder of question one, meaning from what was proven, there was no overall difference between student classification, first-generation status, or institutional type. However, question three rejected part of the null hypothesis by discovering there is a difference in focused attention between participants with a high level of the imposter phenomenon (61+) and those with a lower score (< 61). The overall academic engagement did not show a difference. The final question revealed significant differences between co-curricular engagement across institution types. First-generation sophomores experienced a difference in co-curricular quantity, while first-generation freshmen experienced a difference in co-curricular quality.

The researcher extracted a wealth of data from the qualitative portion of the study. Many themes emerged in each section, but a few contributed to the overall imposter experience: belonging, fear of negative evaluation, comparing to others, and self-doubt.

The themes provide awareness of imposter phenomenon experiences. In addition to learning about the experience, the research revealed key themes about managing impostorism, including characteristics of IP, practical coping skills, positive indicators for involvement, and support systems. Chapter five will continue the discussion by amalgamating the quantitative and qualitative results and providing a thorough research analysis.

# Chapter Five: Discussion

This chapter summarizes the study and significant findings presented in chapter four. The researcher provides recommendations for higher education administrators, faculty, staff, and first-generation students. The lived experiences shared by the participants and an extensive review of the current literature guide these recommendations. Limitations and suggestions for future research conclude the chapter.

## Summary of the Study

This study explored college students' experiences to understand the imposter phenomenon's effects on academic and co-curricular engagement, primarily focusing on first-generation college students. The study sought differences between first-generation student status, student classification, and institutional type. A qualitative portion further examined how the imposter phenomenon impacted first-generation college students, identifying imposter behaviors, coping strategies to combat IP, and how IP impacts student engagement.

### *Overview of the Problem and Purpose*

Research supports the strong bond between student engagement and retention (Chen et al., 2008; Conner, 2011; Hattie & Anderman, 2013). First-generation students are especially at risk, with approximately 20% graduating after six years of post-secondary enrollment (RTI International, 2019). Although several barriers prevent first-generation students from succeeding, the imposter phenomenon has proven to be challenging (Ayesiga, 2021; Holden et al., 2021; Le, 2019). Higher education administrators, faculty, and staff must understand the incidence, impact, and strategies to effectively support these students to increase retention.

The imposter phenomenon literature moderately reviews the first-generation student experience, but only a few performed qualitative analyses to understand the impact in detail (Bravata et al., 2019). Furthermore, no studies analyzed the impact on academic or co-curricular engagement. Institutional support (Brewer, 2011) and campus engagement (Choy, 2001) significantly increase first-generation student completion rates. This study aimed to close the gap by exposing barriers created by the imposter phenomenon and identifying resources used to promote resilience.

### *Research Questions and Hypotheses Revisited*

To investigate the imposter phenomenon influence on first-generation college students, the researcher utilized the following research questions and hypothesis:

1. How do first-generation students experience the imposter phenomenon?
2. What resources are needed to support first-generation college students experiencing the imposter phenomenon?
3. How do students feel the imposter phenomenon impacts academic engagement?
4. How do students feel the imposter phenomenon impacts co-curricular engagement?

   $H_{1;}$ First-generation students experience the imposter phenomenon more than continuing-generation students.

   $H_{2;}$ There is a difference in the imposter phenomenon experience among first-generation Freshmen, Sophomores, Juniors, or Seniors.

   $H_{3;}$ There is a difference in the imposter phenomenon experience among first-generation students at a community college or private university.

$H_{3a;}$ There is a difference in the imposter phenomenon experience among first-generation freshmen students at a community college or private university.

$H_{3b;}$ There is a difference in the imposter phenomenon experience among first-generation sophomore students at a community college or private university.

$H_{4;}$ The imposter phenomenon influences the academic engagement of first-generation college students?

$H_{4a;}$ There is a difference in academic engagement among first-generation freshmen students at a community college or private university.

$H_{4b;}$ There is a difference in academic engagement among first-generation sophomore students at a community college or private university.

$H_{5;}$ The imposter phenomenon influences the co-curricular engagement of first-generation college students?

$H_{5a;}$ There is a difference in co-curricular engagement among first-generation freshmen students at a community college or private university.

$H_{5b;}$ There is a difference in co-curricular among first-generation sophomore students at a community college or private university.

***Review of Methodology***

This study utilized a mixed-method approach to address the research questions. The Clance Imposter Phenomenon Scale (CIPS) (Clance, 1985) measured the levels of impostorism in the community college and private four-year samples across student classification and first-generation status. The CIPS displayed strong validation as it is widely used in research to measure impostorism (Parkman, 2016). The Engaged Learning Index (ELI) (Schreiner, 2010) addressed the levels of academic engagement among first-

generation students with moderate or frequent imposter levels. Finally, the Co-Curricular Involvement Experience Index (CIEI) (Endress, 2000) examined the quantity and quality of co-cocurricular experiences. In addition to determining correlations between impostorism and engagement, the researcher conducted interviews to understand the impact of the imposter phenomenon, identify positive coping skills, and gain insight from support structures.

## Discussion

Research extensivity identified the prevalence and impact of the imposter phenomenon (Bravata et al., 2019). Since the discovery of impostorism in 1978 (Clance, 1978), the literature reveals influences on gender (King & Cooley, 1995; Patzak et al., 2017), first-generation students (Canning et al., 2020), under-represented racial minorities (Peteet et al., 2015), and much more. Scholars indicate that this phenomenon reaches multiple higher education institutions (Parkman, 2016), including community colleges (Jenkins, 2021). This study enhances the literature by validating current research on first-generation students with impostorism and including academic and co-curricular engagement.

### *First-generation v. Continuing Generation Experiences*

Substantial research exists in the literature regarding first-generation students. This research encompasses STEM majors (Trefts, 2019), occupation experiences (Zabat et al., 2021), identity negotiation (Lounsbery, 2014), and more. First-generation student experiences will specifically be discussed later in the chapter. Only a few studies compare first-generation students with continuing-generation students. Haggard (2019) investigated the imposter phenomenon scores between these groups using the Clance

Imposter Phenomenon Scale (CIPS). Results showed that continuing-generation students had greater imposter feelings compared to their first-generation counterparts (Haggard, 2019).

This data was a stark contrast between the hypothesis and pre-existing literature. Peteet et al. (2015) discovered higher imposter feelings with Black and Hispanic first-generation students compared to continuing-generation students. Another study found no correlation between first-generation status in British undergraduate students (Sonnak & Towell, 2001). Like Sonnak and Towell (2001), the current study found no significance between first-generation status and the imposter experience. Both first-generation and continuing-generation students experienced high levels of impostorism.

### *Student Classification Experiences*

The research analyzes the imposter experience from each student classification in multiple studies, but rarely are their experiences compared. Peteet et al. (2015) revealed that juniors and seniors had low psychological well-being and low ethnic identity when the imposter experiences were high. Lee et al. (2021) collected a proportionate sample from each classification. They discovered that regardless of academic level, the participants experienced higher levels of imposter feelings if they participated in an honors program. These students also described perfectionism as a factor for increased impostorism. Ayesiga (2021) also examined first-generation college seniors and their resilience to persist to graduation. Findings exposed first-generation students' struggle with belonging. Data showed that seniors needed to learn to be confident, overcome self-doubt, navigate the campus climate, and ask for resources (Ayesiga, 2021).

The largest student classification represented in the literature is freshmen. Pratt (2020) explores the effects of the imposter phenomenon on stress, belonging, and perfectionism in freshmen undergraduate students. A significant positive correlation exists between stress and impostorism. Furthermore, a significant negative correlation exists between belonging and impostorism. This relationship is consistent with the data found in this study and will be discussed further in the chapter.

The researcher completed a one-way Analysis of Variance (ANOVA) to identify differences between the four student classification types. The ANOVA determined there was not a significant difference in imposter phenomenon scores. The precedent is limited as the literature does not directly analyze the imposter phenomenon among classification types. Also, the data was comprised mainly of freshmen ($n$ = 60). A larger sample from sophomores, juniors, or seniors could have provided a different result.

### *Institution Type Experiences*

A significant amount of literature covers four-year college student imposter experiences and a limited amount on community college students (Parkman, 2016). One of the most extensive studies, conducted by Jenkins (2021), revealed significant disparities in students who reported having a diagnosed disability. Students with disabilities had much higher levels of impostorism in the community college sample than in the public four-year institution (Jenkins, 2021). As noted in the study, these findings were consistent with prior research on disabilities (Shessel & Reiff, 1999; Sukhai & Mohler, 2016).

This study did not measure variances in demographic outside of student classification, first-generation status, and institution type. Analysis of the institution type

found a significant statistical difference between freshmen at a community college and freshmen at a four-year private university. A descriptive analysis of institution type suggests that four-year students experience more impostorism, with community college students having 75% frequent or intense imposter feelings and four-year students having 85.8%. Despite the 10% difference, the astounding fact is that both groups are mostly above 75%. These results are consistent with the literature as Jenkins (2021) and Tigranyan et al. (2021) discovered 88% among community college students and Ph.D. students, respectively.

### *First-Generation Experiences*

Several barriers exist for first-generation college students. As discussed in chapter 2, these students struggle with academic preparedness (ACT, 2013; Adelman, 2006; Kopp & Shaw, 2016; Schmitt et al., 2009), feeling belonging (Longwell-Grice et al., 2016), and mental health (Breslan et al., 2008; Kessler et al., 1995). These barriers compound and can affect the first-generation persistence rate. Without proper intervention, these issues will continue to increase self-doubt, comparison with others, and fear of failure, ultimately making them feel like imposters.

This study did not find a significant difference in impostor scores among first-generation and continuing-generation college students. However, a wealth of information was received from the qualitative portion to answer question one. A deductive thematic analysis revealed several critical experiences first-generation college students had with the imposter phenomenon. These themes were reactions/thoughts to the imposter phenomenon, positive coping strategies, and effects on academic and co-curricular engagement.

**Impostorism.** All eight interviewed participants ranked experiencing frequent to intense feelings of impostorism. Not surprisingly, everyone mentioned feeling like they did not belong or feared exposure as a fraud. Kyle explained the imposter phenomenon as feeling like he did not deserve to be in class based on his previous experiences. Kyle attributed his feelings of impostorism to societal expectations and internal feelings of doubt.

This definition aligns with the pre-existing literature. Leary et al. (2000) identified three attributes of IP: a sense of being a fraud, fear that others will suspect fraudulence, and internalizing success to maintain impostor feelings.

Clance and Imes (1978) coined the imposter phenomenon as attributing success based on external factors, such as luck. Morgan mentioned how she did not know why she attended college and felt getting into school was the luck of the draw. The current study supports the original findings of Clance (1978), as several successful students are experiencing imposter characteristics, despite their successes.

**Belonging.** Findings from the current study support the need for first-generation students to feel belonging on campus. As noted in Hausmann et al. (2009) and Morrow and Ackermann (2012), belonging affects institutional commitment and indirectly affects persistence. Six out of the eight participants mentioned belonging as an essential factor in their experience with the imposter phenomenon. No one mentions explicitly leaving the institution, but several are disconnected. Anna provides context by stating how she does not feel connected to her school because of the imposter phenomenon. The primary cause is that she feels like she does not fit in.

Another study by Stebleton et al. (2014) found that first-generation students reported lower ratings of belonging, greater levels of depression, and lower use of services. Studies suggest that once these first-generation students feel like they do not belong, they have difficulty asking for help. Results from the current study display how the imposter phenomenon negatively impacts belonging on campus.

**Self-Doubt.** College can be perceived as a highly competitive academic environment, especially by first-generation students. Research demonstrates higher levels of anxiety and stress in competitive environments, which lead students to doubt their intelligence (Abouserie, 1994; Sommet et al., 2013; Wilkinson & Pickett, 2009). Six out of the eight participants in the current study expressed doubt in many of their answers. Even Morgan, a high-achieving student in an organization, felt like she was making the meetings boring, wondering if students thought she was an effective leader.

Doubt about the imposter phenomenon appeared differently in many situations. With Morgan, doubt manifests as a challenge to her success. It makes her consider her interactions with peers, critically reflecting on her experience as a leader. This recollection could be what previous research has coined true imposter. Leary et al. (2000) discovered two types of impostors, true imposters—who believed others perceived them too positively—and strategic imposters—who think they are not as good as others think. Morgan is grateful for her leadership position but thinks others have too much faith in her leadership abilities.

Elsa displays strategic imposter characteristics when talking about her teammates. She mentioned concerns that everyone is pretending to like her and will turn on her any day. The current study suggests that doubt can positively encourage reflection or

negatively affect participation. Elsa can push through her doubt and interact with her teammates, but not all participants were successful.

**Comparing to Others.** Another effect of the competitive college environment is the comparison of others. First-generation students struggle with classroom competition. The literature has demonstrated that first-generation students underperform academically due to the mismatch between their work-class background ideals and continuing-generation middle-class independent norms (Stephens et al., 2012). Data from Stephens et al. (2012) revealed in the study that American universities favored norms of independence and first-generation students failed to adapt to these norms, resulting in lower grades.

The current study found that six out of the eight participants compared themselves to their peers in their college experience. Participants either compared themselves based on their past or present experiences. Non-traditional students attributed their fears to returning to education after an extended period. The main concern is not being prepared compared to their peers who had just graduated high school. Kyle did not attend school since 2005, making it challenging to understand the information. Kyle experiences stress about returning to college and is anxious about catching up with others.

Opposingly, Morgan currently cares about the students in her behavior science classes. She perceives most of her peers as intelligent and sees them making solid connections. This increases her imposter feelings, making her feel like her experience is based on luck. Morgan is nervous about making social connections and does not think she is smart enough to be at the private school. The literature from chapter two discussed the importance of social capital. First-generation students arrive at college without pre-

existing relationships. These social networks assist students in accessing resources to guide, support, and effectively manage their academic environments (Moschetti & Hudley, 2009). The current study supports the need for social networks and demonstrates how the imposter phenomenon increases the comparison of others.

**Fear of Failure.** Failure can be a motivating experience or a barrier, depending on the individual. According to Sadd et al. (1978), participants who scored high on fear of failure do not express their needs or fail to stand apart from the crowd. Maladaptive behaviors (such as self-handicapping) also correlate with fear of failure, especially without concrete goals (De Castella et al., 2013). The current study found four out of the eight participants mentioned fear of failure due to the imposter phenomenon.

Tori is one of the few individuals to mention how fear of failure encouraged her to go to school. She states that she only went to school to avoid failing her business. Although school is stressful, she persists, so she will not waste money on her career. Anna also expressed fear of failure when responding to if she will accomplish her goals. She mentioned having dark thoughts about giving up and changing her major to something else that's easier because it is just too difficult. Anna experiences extreme challenges in her program as the only female. Students are reluctant to engage with her, and she feels little support from the administration. As a senior, she invested in the program, and the fear of failure is evident in her response. Anna fears wasting all her energy, negatively impacting her college experience.

**Perfectionism.** A foundation of impostorism depicted in the literature is the need to be perfect. Clance and Imes (1978) and Harvey's (1981) studies revealed that participants experienced perfection pressures. The current study supports the literature, as

four out of the eight participants displayed perfectionism in their answers. Participants categorized perfection into two channels: perfection to avoid being defrauded or fear of failure. Judy fears preparing for class. She states that everything needs to be read to the exact detail, with everything perfectly memorized. If she does not do it perfectly, she feels severely underprepared.

This enormous pressure to be perfect can be detrimental to student success. Research identifies relationships between psychopathology outcomes (clinical diagnoses of depression, anxiety disorders, obsessive-compulsive disorder, and eating disorders; symptoms of these disorders; and outcomes related to psychopathologies, such as deliberate self-harm, suicidal ideation, and general distress) and each perfectionism dimension (Limburg et al., 2017). Limburg et al. (2017) revealed from an analysis of 284 studies that perfectionism is a transdiagnostic factor, and both dimensions (perfectionistic strivings and concerns) are associated with psychopathology. This revelation means there is a correlation between mental health and levels of perfectionism, often triggered by imposter tendencies.

Meredith limits her social connections because she has an intense fear of failure. Meredith stresses about her academics and misses opportunities to build social connections. These connections are critical for building support, especially during challenging situations. If it remains unchecked, perfectionism can lead to concern over mistakes, the need for approval, and rumination (Dudau, 2014). Additionally, self-presentation strategies can develop, including perfectionism, self-promotion, nondisclosure of imperfection, and non-display of imperfection (Hewitt et al., 2003).

These strategies lead to reluctance, which increases avoidance of challenging or risky activities, as with Meredith's example (Hewitt et al., 2003).

**Negative Evaluation.** The literature links perfectionism, fear of negative evaluation, and fear of failure together (Sagar & Stoeber, 2009). Fear of negative evaluation specifically has been associated with achievement. A study of librarians in 2015 indicated that negative evaluation negatively influences career progressions (Crawford et al., 2015). Another study suggests academic risk-taking is significantly associated with fear of negative evaluation (Cetin et al., 2014). The current study supports the literature as seven of the eight articulated concerns about negative evaluation from peers, faculty, and staff. Elsa experiences severe anxiety when worried about how the teacher will judge her homework. She spends most of her time worrying about how her assignments are perceived. When Elsa turns in an assignment different from her previous work, extreme anxiety develops. Although Elsa has a positive rapport with the professor, she fears that taking a risk will cause her to fail the assignment. Elsa voiced that she received a positive grade on the assignment, but the stress was almost too much to process.

### *Managing the Imposter Phenomenon*

Very few studies provide coping strategies for people experiencing the imposter phenomenon, and even less specifically for first-generation college students. A study by Hutchins and Rainbolt (2016) provided practical suggestions for faculty who experience high levels of impostors. These included providing supervisor feedback, developing faculty support networks, and implementing a curriculum to discuss imposter phenomenon characteristics (Hutchins & Rainbolt, 2016). Hutchins et al. (2018) affirmed

prior research, signifying the importance of learning and developing interventions to correct how impostors attribute success and failures, increase social support, and normalize the imposter experience. The current study sought to identify coping skills utilized by first-generation students and to expand the literature. More information about coping strategies is needed if administrators expect to assist students with overcoming the imposter phenomenon challenges.

Several coping strategies emerged from the participants, including seeking support, resilience, and processing feelings. Support manifested in multiple forms; most came from people. Almost all participants identified faculty as a strong combater of impostorism. This information makes sense because faculty are in control of the educational process. A faculty member can provide encouragement, clarify questions, and objectively evaluate a student's performance. Kyle felt comfortable asking his professor questions. He turns to his department chair if he has a tricky question. Tori appreciates how her professors accommodate missing classes by offering virtual learning opportunities. She cannot attend class, but three professors are willing to assist through virtual learning. Faculty support is critical to student success and retention (Shelton, 2003), and it is apparent how the positive influence decreases impostorism, as described by the participants' experiences.

Personal support from family or peers also provided a pivotal role in student success. Kyle encourages his brother to join a medical program where he lives. He attributes his success to his brother, whom he talked into medical school. They keep each other on track and focus on school together. Kyle can normalize his experience through his brother and validate any challenge he may have with the program. Elsa strategically

makes friends in each one of her classes to ask any questions or form study groups. She made sure that there were acquaintances with at least one person in her classes. If Elsa were confused about something, she would message them for questions. Faculty, family, and peer support positively assisted these students with their impostorism and increased persistence.

Resilience strongly connects to aptitude, achievement, and mental health (Hartley, 2011). Studies show that the higher the resilience, the more likely a student will persist to graduation (Hartley, 2011; Hartley, 2013). All eight participants described how resilience helps them overcome their imposter feelings. Despite her challenges with her major, Anna feels she can be successful and push through her feelings of inadequacy. Kyle references his past trauma in the military by stating he has proven people have to kill him to stop moving forward. Although he has been through some dark lows, he does not give up on his journey. Both students seek to prove themselves to others. The difference is that Anna can visualize the end goal, and Kyle reflects on his past challenges. Future and past provide motivation and encourage them to persist.

Motivation also contributed to resilience in the study. Participants reported that success in their careers mitigated imposter feelings and encouraged them to continue in school. Elsa comments about how earning money motivates her to do more in the company. Elsa surmises that external motivation empowers her to remove anxieties from the imposter phenomenon. Anna affirms informing the researcher about their success working as a title company manager. Research demonstrates that motivation can positively impact persistence (Allen, 1999; Gao et al., 2012). The current study upholds the literature and suggests that motivation decreases imposter feelings.

Finally, the last positive coping strategy identified by participants was processing feelings. Identifying negative imposter feelings and processing them is crucial for participants. Elsa processed her feelings through journaling. According to research, journaling is a front-line tool for confronting mental health and provides powerful intervention when conventional services are unavailable (Wurtz, 2022). Elsa can utilize this resource to decrease her negative feelings.

Other participants process their feelings with people. Tori describes how she has to speak with her partner. She states that she frequently talks to externalize her feelings. Failing to do this will cause her to drown. Connecting with others externalizes the experience and helps validate the imposter's feelings. Participants explained how much better they felt after venting their frustrations and how they continued in their studies.

**Recommendations to Combat the Imposter Phenomenon**

The researcher has recommendations on how to identify and mitigate imposter feelings before students leave the institution. First, administrators need to normalize the impostor phenomenon experience, raising awareness of its existence. Most participants exhibited frequent or intense feelings of impostorism, and two students in the interview did not know about the imposter phenomenon prior to the study. Providing tools for students to name the experience validates their feelings, letting them know others share their doubts. A social media campaign or mental health publicity would disseminate information effectively to students, faculty, and staff.

In addition to making impostorism known, further engagement is necessary to mitigate imposter feelings. Faculty were the most critical support system identified in the study by participants. The researcher recommends that faculty and staff participate in

required training about impostorism. This training should cover strategies to mitigate impostorism and impostor characteristics, such as analyzing the fear of negative evaluation, peer comparison, and fear of failure. Academic leaders should be more prepared to assist students if they can recognize self-destructive behaviors. Intervention is needed early to prevent students from leaving the institution. Furthermore, these workshops can assist faculty with their impostorism, promoting a positive work environment.

Another change needed is increasing overall professional support for students struggling with IP. Although not diagnosed as a mental health condition, IP correlates to mental health concerns in college students. The campus counseling center (or similar department) must provide resources for these students to process negative feelings. Participants in the study mentioned the effectiveness of processing feelings with others when negative thoughts emerged. Trained professionals are pivotal in assessing student needs and providing appropriate student resources. They also can refer to outside resources if the student requires specialized attention beyond the services offered.

Aside from counseling support, the researcher recommends a staff person or student organization dedicated to assisting students with impostorism. These entities can provide holistic support through peer mentorship, programming, and workshops. Establishing a person(s) at the institution demonstrates a commitment to retention and ensures support is available. This strategy could be a subfunction of a pre-existing role, such as a retention specialist or success coach. The student organization group could meet as frequently as the members desired. First-generation and continuing-generation students should be represented in the organization, as IP affects both populations significantly.

Support is also needed to increase academic engagement. One of the most significant inhibitors to academic engagement was comparing others. Although academic engagement is usually public, the research recommends incorporating an activity that allows anonymity. One strategy faculty can utilize is having students answer questions through text messaging software. This method allows students to answer their experiences and not worry about their peers. The complication of this method is that it opens the conversation for inappropriate answers, and it is impossible to grade. However, it will increase engagement from those afraid of negative judgment.

Another recommendation to increase academic engagement is to focus on completing the assignment rather than traditional grading. Un-grading is becoming an increasing trend in academics and emphasizes mastery. Despite a few concerns, this method does not mean the students fail to receive a quantifiable grade. The student can complete an assignment many times until the professor deems it complete. It requires more professor feedback, but the student has the opportunity to learn with each submission. Doing this removes the fear of failure, allowing students to thrive in learning.

Co-curricular engagement is also significant in student retention. The researcher recommends that organizations are easily accessible for students to join. There may be a few organizations with challenging recruitment processes (like Greek life), but most should be easy to join anytime during the academic year. Removing the complicated process permits students with IP to take a risk when they are ready. Along with this, organizations should also make it easy to rejoin after an extended absence. Students with IP already stress about the negative perception of others, which can be exacerbated if they fail their commitments.

Organizations must try to include all types of people. Only some people are leaders; organizations need followers to thrive. Advisors and executive boards should participate in training to effectively recruit and retain all students, especially those with impostorism. This training should increase awareness of the imposter phenomenon, provide effective coping strategies to reduce imposter feelings, and share experiences of how impostorism impacts campus culture. Diversity is also essential for representation. Students not represented in an organization will not stay, according to the participants in the study.

**Recommendations for Future Research**

This study contributed much to the pre-existing literature by analyzing undergraduate students across institution types and how the imposter phenomenon impacted student engagement. The author suggests further research to understand the experience by classification fully. Freshmen primarily comprised the population sample, with the interview portion having one sophomore and one senior. More information is needed from all classifications to understand the imposter phenomenon experience fully.

Another recommendation for future research is to examine correlations between demographic types: gender, race, disability status, or age. This study chose not to review demographics due to the robust investigation of student classification and institution type. The literature identifies underrepresented first-generation students as having more challenges than their peers. It would be interesting to know if these students also experience greater levels of IP.

The researcher also suggests a longitudinal study to examine the imposter phenomenon's influences over time. Understanding how a freshmen's experience evolves

is critical for administrators to assist with managing the phenomenon. The research could provide insight into when IP is most prevalent, if IP diminishes over time, and what factors influence IP. The main challenge would be to find students who persist to graduation. However, the benefits of a longitudinal study outweigh the negatives.

This study focused on first-generation college students, but most students experience impostorism. The researcher recommends simplifying the analysis by removing the first-generation qualifier. Examining all students would provide a more robust sample, resulting in different conclusions. Freshmen represented the largest population, with sophomores following. Seniors represented the smallest group, with only four people. A sub-analysis could be performed on each classification if the study includes continuing-generation students.

**Conclusion**

This study examined the first-generation student imposter phenomenon experience across different institution types and how it impacts academic and co-curricular engagement. A mixed methods approach identified the prevalence of impostorism in the community college and the private university and increased prior knowledge of how it affects first-generation students through thematic analysis. Results demonstrated that IP significantly influences continuing-generation and first-generation students, especially first-generation freshmen across institution types. Furthermore, data suggests IP has an impression on active participation, co-curricular quantity (in first-generation sophomores), and co-curricular quality (in first-generation freshmen). Finally, the study revealed positive coping strategies utilized by participants to persist to graduation.

This study strongly contributes to the literature in a variety of ways. The author did not find any prior research indicating the impact of the imposter phenomenon on student engagement. This information is insightful since research has demonstrated the importance of student engagement in belonging and retention. Moreover, the study provides lived experiences of first-generation college students struggling with IP. Only a few qualitative studies examine impostorism in first-generation students, and even fewer identify resources to encourage persistence. The researcher hopes information learned in the study will empower professors, staff, and college administrators to consider the psychological effect of the imposter phenomenon and develop resources to assist students. Students, especially first-generation, need specialized support to combat the imposter feelings. There is a potential to thrive with the right tools, ultimately leading to higher retention and overall student success.

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## Appendix A: Demographic Questions

Age: (If 17 or younger the survey will route to the end)

- 17 or younger
- 18-20
- 21-23
- 24-26
- 27-30
- 31-34
- 35-38
- 39-42
- 43-46
- 47-50
- over 50

Did either of your parents earn a bachelor's degree?

- Yes
- No

Gender:

- Female
- Male
- Other

Class level:

- First-year (0-60 Credit Hours)
- Sophomore (61-89 Credit Hours)
- Junior (90-119 Credit Hours)
- Senior (120+ Credit Hours
- Other (Please Specify)

Interview Question (At the End of the Survey)

- Would you be willing to take part in a follow up interview?
- If yes is selected—please provide you contact information below:
    - Name:
    - Email:
    - Phone Number:

## Appendix B: Clance Impostor Phenomenon Scale

For each question, please circle the number that best indicates how true the statement is of you. It is best to give thefirst response that enters your mind rather than dwelling on each statement and thinking about it over and over.

**1. I have often succeeded on a test or task even though I was afraid that I would not do well before I undertook the task.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**2. I can give the impression that I'm more competent than I really am.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**3. I avoid evaluations if possible and have a dread of others evaluating me.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**4. When people praise me for something I've accomplished, I'm afraid I won't be able to live up to their expectations ofme in the future.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**5. I sometimes think I obtained my present position or gained my present success because I happened to be in the right place at the right time or knew the right people.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**6. I'm afraid people important to me may find out that I'm not as capable as they think I am.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**7. I tend to remember the incidents in which I have not done my best more than those times I have done my best**.

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**8. I rarely do a project or task as well as I'd like to do it.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**9. Sometimes I feel or believe that my success in my life or in my job has been the result of some kind of error.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**10. It's hard for me to accept compliments or praise about my intelligence or accomplishments.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**At times, I feel my success has been due to some kind of luck.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**11. I'm disappointed at times in my present accomplishments and think I should have accomplished much more.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**12. Sometimes I'm afraid others will discover how much knowledge or ability I really lack.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**13. I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I**
attempt.

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**14. When I've succeeded at something and received recognition for my accomplishments, I have doubts that I can keeprepeating that success.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**15. If I receive a great deal of praise and recognition for something I've accomplished, I tend to discount the importanceof what I've done.**

1 2 3 4 5

(not at all true) (rarely) (sometimes) (often) (very true)

**16. I often compare my ability to those around me and think they may be more intelligent than I am.**

1 2 3 4 5

| | | | | |
|---|---|---|---|---|
| (not at all true) | (rarely) | (sometimes) | (often) | (very true) |

**17. I often worry about not succeeding with a project or examination, even though others around me have considerableconfidence that I will do well.**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| (not at all true) | (rarely) | (sometimes) | (often) | (very true) |

**18. If I'm going to receive a promotion or gain recognition of some kind, I hesitate to tell others until it is an**
accomplished fact.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| (not at all true) | (rarely) | (sometimes) | (often) | (very true) |

**19. I feel bad and discouraged if I'm not "the best" or at least "very special" in situations that involve achievement.**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| (not at all true) | (rarely) | (sometimes) | (often) | (very true) |

**Scoring the Impostor Test**

The Impostor Test was developed to help individuals determine whether or not they have IP characteristics and, if so, to whatextent they are suffering.

After taking the Impostor Test, add together the numbers of the responses to each statement. If the total score is 40 or less, the respondent has few Impostor characteristics; if the score is between 41 and 60, the respondent has moderate IP experiences; a score between 61 and 80 means the respondent frequently has Impostor feelings; and a score higher than 80 means the respondent often has intense IP experiences. The higher the score, the more frequently and seriously the Impostor Phenomenoninterferes in a person's life.

## Appendix C: Engaged Learning Index

Please rate your agreement with each of the items by using a 1 to 6 scale, with 1 indicating "strongly disagree" and 6 indicating "strongly agree."

| | | SD | | | | | SA |
|---|---|---|---|---|---|---|---|
| 1. | I often discuss with my friends what I'm learning in class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. | I regularly participate in class discussions in most of my classes. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. | I feel as though I am learning things in my classes that are worthwhile to me as a person. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. | It's hard to pay attention in many of my classes. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. | I can usually find ways of applying what I'm learning in class to something else in my life. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. | I ask my professors questions during class if I do not understand. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. | In the last week, I've been bored in class a lot of the time. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. | I find myself thinking about what I'm learning in class even when I'm not in class. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. | I feel energized by the ideas that I am learning in most of my classes. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. | Often I find my mind wandering during class. | 1 | 2 | 3 | 4 | 5 | 6 |

Scale Scores:
**Meaningful Processing** = 1 + 3 + 5 + 8 + 9 = _____ (average score is 22.3)
**Focused Attention** = Reverse Score 4 + 7 + 10 = _____ (average score is 10.6)
**Active Participation** = 2 + 6 = ____ (average score is 8.8)
**Total Score** (max of 60) = _____ (average score is 41.7)

## Appendix D: Co-Curricular Involvement Experience Index

| **Involvement** | |
|---|---|
| INVOLVE_HOURS | Please indicate the number of hours per week that you devoted toyour involvement in a student organization or student leadership role during this semester:<br>• 0 (0)<br>• 1-5 (1)<br>• 6-10 (2)<br>• 11-15 (3)<br>• 16-20 (4)<br>• 21-25 (5)<br>• 26-30 (6)<br>• more than 30 (7) |
| INVOLVE_MANDATE | Please indicate how many of your hours per week devoted to student organizations or leadership roles are incentivized or mandated (i.e., stipend, hourly pay, scholarship-dependent, etc.).<br>• 0 (1)<br>• 1-5 (2)<br>• 6-10 (3)<br>• 11-15 (4)<br>• 16-20 (5)<br>• 21-25 (6)<br>• 26-30 (7)<br>• more than 30 (8) |
| LEADER | Please indicate the number of elected or appointed positions youhave held during this semester (e.g., president/chairperson/captain/editor, secretary, treasurer, committee/project chairperson, Resident Assistant (RA), orientation leader, etc.):<br>• 0 (0)<br>• 1 (1)<br>• 2 (2)<br>• 3 (3)<br>• 4 (4)<br>• 5 or more (5) |

| **Organizational Engagement Quality Items** *(Frequency_2: 1-NA to 5-Very Often)* | |
|---|---|
| (QUALITY1) | When I attended organization meetings, I expressed my opinion and/ortook part in discussion. |
| (QUALITY2) | When I was away from members of the group/organization, I talked with others about the organization and its activities, or wore a shirt orbutton to let others know about my involvement. |
| (QUALITY3) | When the group/organization sponsored a program or activity, I madean effort to encourage other students and/or members to attend. |
| (QUALITY4) | I volunteered or was assigned responsibility to work on something thatthe group or organization needed to have done. |
| (QUALITY5) | I fulfilled assigned duties or responsibilities to the group ororganization on time this semester. |

## Appendix E: Qualitative Interview Questions

Opening Questions

How do first-generation students experience the imposter phenomenon?

1. What does the imposter phenomenon mean to you?
2. How would you describe your experience with the Imposter Phenomenon?
    a. If experienced, are there any specific challenges you can think of?
3. What coping strategies, if any, have you used to manage your imposter phenomenon feelings throughout your college experience?

How do students feel the imposter phenomenon impact's academic engagement?

4. How do you define academic engagement?
5. What are your academic goals? Do you think you will achieve these goals? Why or why not?
6. Describe a time when you did not feel that your academic work was good enough before submitting your work or receiving feedback?
7. Tell me about an academic experience or group project when you felt that you were not prepared.
8. Has the imposter phenomenon affected your academic engagement (studying, group projects, class interactions)? Please describe.

How do students feel the imposter phenomenon impact's co-curricular engagement?

9. Have you ever struggled to get involved in an organization or leadership role? Why or why not?
10. Do you see yourself as successful outside of your classroom experience? To what do you attribute to your success?
11. Has the imposter phenomenon affected your co-curricular engagement (student involvement, outside-class interaction, events). Please describe.

What resources are needed to support first-generation college students experiencing the imposter phenomenon?

12. What resources have you accessed at your school for you to be successful? Are they any missing resources?
13. What messages have your family and/or support system provided you about being successful?
14. What have you found to be helpful when it comes to combating the imposter phenomenon feelings?

Closing Questions

15. Is there anything I did not ask that you feel is important and you would like to share?

# Appendix F: Permissions

Hi Ethan,
Thanks for your interest in using the Thriving Quotient. I'm a little confused about what you would like to use, however. Do you mean just the Engaged Learning scale of the Thriving Quotient? If your interest is in engaged learning, I would suggest using the Engaged Learning Index (attached here), which you have my permission to use with proper citation. If you desire to use the whole Thriving Quotient, you would need to complete the attached research agreement and send me a copy of your proposed study. Once I read through that, I will get back to you about using the entire instrument.

Best wishes,
Laurie

Hi Ethan,
Thanks for your patience! My delay has been in part that we no longer include some of these questions on the Thriving Quotient—they were items that Matthew Vetter included when he was working on his dissertation a few years ago. However, you are welcome to use these items in your study if you are collecting new data. Dr. Vetter may have more insight for you, if you want to connect with him: mkvetter2@gmail.com.
Thanks,
Laurie

Laurie A. Schreiner, PhD
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626-815-5322
Want to thrive in your doctoral work?
Check out our doctoral programs in Higher Education at http://www.apu.edu/bas/highered/

Dear Ethan,

Thank you for your replies.

***We have been experiencing some issues with email systems, as some persons have not been receiving my replies (or they possibly go to junk/spam email), so please first only reply back to me (Andra) at pudda67@hotmail.com to let me know you received this (do not click "reply all" or include Dr. Clance's email address (drpaulinerose@comcast.net) as she may not be replying to emails or forwards them to me and similar issues occur).** Thank you. We are working on the issues and appreciate your patience*

Everything seems fine with your methods. You have permission to use and make copies of the scale, *Clance Impostor Phenomenon Scale (CIPS)*, and I have attached it along with the scoring.

**Please read the permission form, included with the scale, and reply with your consent.**

**Please consent: Part of consent is also sending us a full copy of your research paper for our records only (even prior to publication, if you publish) and we will only add the citation to the IP Reference List.**

**Please consent: Given that you are using the CIPS, please use the terminology/title "Impostor Phenomenon" rather than Imposter Syndrome.**

I have further included an IP Reference List (not all inclusive) for your use and/or to make available for participants if they want to know more about the IP and you could refer them to Dr. Clance's website: <http://www.paulineroseclance.com>

**Please consent: If you plan on submitting your research for publication, please first write again for permission conditions of the CIPS** (see previous criteria reply)**.** If you do publish, please send us the citation and a copy of the work/link for our records. The full, proper copyright/permission clause/citation for the CIPS is as follows:

*Clance Impostor Phenomenon Scale* (CIPS). From *The Impostor Phenomenon: When Success Makes You Feel Like A Fake* (pp. 20-22), by P.R. Clance, 1985, Toronto: Bantam Books. Copyright 1985 by Pauline Rose Clance, Ph.D., ABPP. Use by permission of Dr. Pauline Rose Clance. Do not reproduce/copy/distribute without permission from Pauline Rose Clance, drpaulinerose@comcast.net, www.paulineroseclance.com.

**Please consent: If you do any presentations with your research, please send us the citation for the IP Reference List and, if using the CIPS, write for prior permission.**

We wish you well with your work and look forward to receiving a copy of your research!

## Appendix G: Informed Consent Drury

Consent Form for Drury University
**Effects of the Imposter Phenomenon on First-Generation Students' Academic and Co-curricular Engagement**
Ethan Sykes, Researcher

**Abstract Describing Project:** We are doing this study to understand the effects of the Imposter Phenomenon on academic and co-curricular engagement. During this study you will be asked to complete a short survey asking questions about your college experience. It will take about 20 minutes or less to complete the survey. You will also have the opportunity to take part in a follow up 40-60-minute interview by opting in on the survey.

**Voluntary Participation:** Your participation is voluntary. You may choose not to participate or withdraw at any time.

**Confidentiality of Data and Privacy Protection:** We are collecting data that could identify you such as emails. We will also be video and audio recording students who take part in the interview process. Video will be immediately destroyed after collect and only audio will be preserved. Interviews will be transcribed with personal information collected. Every effort will be made to keep your information secure and confidential. Only members of the research team will be able to see your data. We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location and destroyed after three years. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University Drury University, and Ozarks Technical Community College, and representatives of state or federal agencies.

**Risks to Participants:** There are minimal to no risks associated with the study. Participants will not normally complete this survey on any given day. Second risk, as with any study it is possible that minor emotional reaction occurs at which point any participants can remove themselves from the study at any time.

**Benefits:** There are no direct benefits for you participating in this study.

This project has been reviewed and approved by the Drury University Institutional Review Board (IRB). The IRB has determined that the research procedures adequately safeguard the participant's privacy, welfare, civil liberties, and rights. The chair of the IRB may be reached at Drury University, 900 North Benton Avenue, Springfield, MO 65802. The telephone number is 417-873-6397.

Additionally, if you have concerns or complaints about this project, please use the following contact information: Ethan Sykes es370@lindenwood.edu Dr. Roger "Mitch" Nasser RNasser@lindenwood.edu

**I have read the material above, and any questions I asked have been answered to my satisfaction. I agree to participate in this activity, realizing that I may withdraw without penalty or prejudice at any time.**

## Appendix H: Informed Consent Ozarks Technical Community College

Consent Form for OTC
**Effects of the Imposter Phenomenon on First-Generation Students' Academic and Co-curricular Engagement**
Ethan Sykes, Researcher

You are being asked to participate in a research study. We are doing this study to understand First-generation Students and the effects of the Imposter Phenomenon on academic and co-curricular engagement. During this study you will be asked to complete a short survey asking questions about your college experience. It will take about 20 minutes or less to complete the survey. Student will have the opportunity to take part in a follow up 40-60-minute interview by opting in on the survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time. There are no risks from participating in this project.

There are no direct benefits for you participating in this study.

We are collecting data that could identify you such as emails. Interviews will be transcribed with personal information collected. Every effort will be made to keep your information secure and confidential. Only members of the research team will be able to see your data. We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.

**Who can I contact with questions?**
If you have concerns or complaints about this project, please use the following contact information:

Ethan Sykes es370@lindenwood.edu

Dr. Roger "Mitch" Nasser RNasser@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

**I have read the material above, and any questions I asked have been answered to my satisfaction. I agree to participate in this activity, realizing that I may withdraw without penalty or prejudice at any time.**

## Appendix I: Lindenwood IRB Approval

Sep 1, 2022 1:37:30 PM CDT

RE:
IRB-23-1: Modification - Effects of the Imposter Phenomenon on First-Generation Students' Academic and Co-curricular Engagement

Dear Ethan Sykes,

The study, Effects of the Imposter Phenomenon on First-Generation Students' Academic and Co-curricular Engagement, has been Approved.

The submission was approved on September 1, 2022.

Here are the findings:
**Regulatory Determinations**

- This modification entails the attachment of site approval records and a site specific consent document. This modification does not affect the prior risk determination or ongoing approvability of the study.

Sincerely,
Lindenwood University (lindenwood) Institutional Review Board

## Appendix J: Drury IRB Approval

Hi Ethan,

The consent form looks great. Your IRB is approved. Best of luck with your research. I hope you gain a lot from it!
Ying

DU IRB Committee
Ying Cao, Chair
Lay Hall 213
417-873-6397
ycao@drury.edu

**From:** Ethan Sykes <esykes@drury.edu>
**Sent:** Monday, August 22, 2022 7:59 PM
**To:** DU IRB Committee <DUIRB@drury.edu>
**Subject:** Re: New Entry: Institutional Review Board Materials

Hello,

I get it! Please see attached for the consent form.

Let me know if there is any additional information needed for this to be approved!

Thank you,

Ethan

## Appendix K: OTC IRB Approval

**From:** SIMPSON, MATTHEW E. <simpsonm@otc.edu>
**Sent:** Thursday, August 4, 2022 9:25 AM
**To:** SYKES, ETHAN A. <sykese@otc.edu>; Research <Research@otc.edu>
**Cc:** BENZ, ABIGAIL S. <benza@otc.edu>
**Subject:** RE: Sykes IRB Approval Requested

Ethan,

Thank you for providing this. With this documentation, your OTC application is approved.

Thanks!

**Matthew Simpson**
Chief Research and Governmental Affairs Officer
Ozarks Technical Community College
1001 East Chestnut Expressway
Springfield, Missouri 65802
simpsonm@otc.edu
417-447-2648
Information Commons 205I

**From:** SYKES, ETHAN A. <sykese@otc.edu>
**Sent:** Thursday, August 4, 2022 9:22 AM
**To:** Research <Research@otc.edu>
**Cc:** BENZ, ABIGAIL S. <benza@otc.edu>
**Subject:** Sykes IRB Approval Requested

Good Morning!

I requested IRB approval from OTC about to weeks ago to conduct a study in September. I have received exempt approval from the Lindenwood IRB process and wanted to share that with you in hopes it would grant me permission to work with OTC students.

Please review and let me know if you have any questions.

I look forward to your response.

Ethan Sykes
OTC 101 - Adjunct Instructor

## Appendix L: Survey Correspondence

Hello Student!

You are being asked to participate in a research study. We are doing this study to understand the effects of the Imposter Phenomenon on academic and co-curricular engagement.

**During this study, you will be asked to complete a short survey asking questions about your college experience. It will take about 15 minutes or less to complete the survey. You will also have the opportunity to take part in a follow-up 40-60-minute interview by opting in on the survey.**

# LINK TO SURVEY

Your participation is voluntary. You may choose not to participate or withdraw at any time. There are no risks from participating in this project. There are no direct benefits for you participating in this study.

This project has been reviewed and approved by the Drury University Institutional Review Board (IRB). The IRB has determined that the research procedures adequately safeguard the participant's privacy, welfare, civil liberties, and rights. The chair of the IRB may be reached at Drury University, 900 North Benton Avenue, Springfield, MO 65802. The telephone number is 417-873-6397.

**If you have concerns or complaints about this project, please use the following contact information:**
Ethan Sykes es370@lindenwood.edu
Dr. Roger "Mitch" Nasser RNasser@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

Thank you for taking the time to complete the survey!

**Ethan Sykes**
Lindenwood University
Educational Leadership Doctoral Student

**Appendix M: Interview Correspondence**

Hello Student!

You have recently completed a survey about the Imposter Phenomenon and selected you would be interested in completing a 40-60 minute follow-up interview about your experience. Your participation is voluntary. You may choose not to participate or withdraw at any time. There are no risks from participating in this project. There are no direct benefits for you participating in this study.

If you are interested in signing up for a 40-60 minute ZOOM interview, please follow this link to select an interview time:

## LINK TO INTERVIEW SIGN UP

You will be contacted if selected for the interview with details about the appointment. I appreciate your willingness to consider providing further information about the Imposter Phenomenon and help future students, staff, and administration understand the impacts of this important topic.

**If you have concerns or complaints about this project, please use the following contact information:**
Ethan Sykes es370@lindenwood.edu
Dr. Roger "Mitch" Nasser RNasser@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

**Ethan Sykes**
Lindenwood University
Educational Leadership Doctoral Student

# Vita

## Colleges and Universities

2013-2016: Master of Arts in Education, emphasis in Student Affairs

2009-2013: Bachelor of Music Education

## Teaching and Employment History

2020-present: Director of Housing and Residential Programs at Drury University

2018-present: Adjunct Instructor at Ozarks Technical Community College

2018-2020: Veterans Upward Bound Advising Coordinator at Ozarks Technical Community College

2016-2018: Residence Life Coordinator at the University of Wisconsin Milwaukee

## Committee Involvement

2022-present: President's Sustainability Committee

2020-present: NASPA Region IV-West Advisory Board

2020-present: Student Intervention Team

2018-2020: Green Dot Task Force

2017-2018: Student Staff Training Committee

2016-2018: Resident Assistant Recruitment and Selection

## Presentations

2021: "Combatting the Imposter Phenomenon" | Drury First-Generation Conference

2019: "Money in the Bank" | Veterans Upward Bound

2016-2018: "Gatekeeper Suicide Prevention" | RA Training

2016: "(Dis)ability: The Hidden Truth" | RA Training

2014: "Green Dot: Sexual Assault Awareness and Prevention" | WKU Orientation