Pre- and post-matriculation student success in community colleges: A survey of strong and integrated practices

by

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B.A., Northwestern Oklahoma State University, 1996
B.A., Northwestern Oklahoma State University, 1997
M.A., Fort Hays State University, 2008

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF EDUCATION

Department of Community College Leadership
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2023

Abstract

This heuristic study explored student success initiatives and practices of select community colleges as implemented during students' pre- and post-matriculation periods and whether those colleges have united them into a cohesive design. The pre- and post-matriculation timeframe is the most critical segment of the student's entire academic career (Acevedo-Gil & Zerquera, 2016; McFadden, 2016). While several nationwide initiatives exist to encourage and assist community colleges to implement components of the pre- and post-matriculation experience, institutions may not consider their efforts to be an integrated system.

Qualitative data were gathered from key informants with knowledge of their institution's pre- and post-matriculation practices at a reputational sample of three community colleges. The reputational sample was identified by a panel of experts for recognized pre- and post-matriculation student success practices. This study captured strong pre- and post-matriculation practices among the sample colleges, which practices they held in common, how those practices were integrated, and which cultural components appeared to be associated with student success.

The research indicated that successful pre- and post-matriculation processes shared several elements in common, including a college culture that empowered its employees, a streamlined student experience built on data, and a president who helped foster an environment of innovation. Based on these findings and the manner in which the interview participants described their operations, participating colleges have created pre- and post-matriculation systems that can provide insight for institutions seeking to improve their efforts in these key areas. Because the pre- and post-matriculation experiences at these colleges are dependent on one each other as parts of a single process with a shared goal, they may be considered a system and their performance in these phases can and should be assessed as a combined entity. By focusing intentionally on streamlining operations, cross-training employees, and consolidating offices into a single space, the colleges have built systems specifically designed to dismantle traditional barriers and to guide students into the second semester.

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Chapter 1 - Introduction

President Harry Truman never earned a college degree. He dropped out after only a year. Yet his belief in education remained. In December of 1947, with the nation eager to rebuild after the Second World War, Truman wrote, "…we are challenged by the need to insure that higher education shall take its proper place in our national effort to strengthen democracy at home and to improve our understanding of our friends and neighbors everywhere in the world" (Truman, 1947, para. 2). Believing that America's great advantage rested in the education of its people, Truman created a special Commission that delivered a report titled "Higher Education for American Democracy." By the 1960s, one new community college was opening its doors every week (Cohen et al., 2013).

Propelled by numerous pieces of federal legislation aimed at expanding college access through equity provisions and student aid, college enrollment from 1960 to 1970 grew by over 120% (Coomes, 2000). This led to a relatively new field of study: student persistence and retention. Astin (1972) was one of the first to analyze data related to persistence and retention in a study aptly named "College Dropouts." Building on this, Tinto (1975) suggested that all students enter college with (a) pre-existing attributes (family, obligations, educational background) and (b) expectations of the college experience. Tinto examined how those expectations were impacted by both formal and informal college experiences. The results of these interactions influenced the student's decision to remain in college or withdraw. Community colleges have built their reputation—for better and sometimes for worse—on the "open door policy," or the willingness to accept any student holding the equivalent of a high school diploma, regardless of their academic history (Cohen et al., 2013). In lieu of an admissions exam or other qualifier, students need only complete a placement test that determines

college readiness and the possible need for developmental coursework. Examples include the nationwide Accuplacer and state-specific tests such as the Texas Success Initiative Assessment. In any case, no particular score is required for admission into a community college. Even a basic English language proficiency assessment typically is not necessary; while a four-year state university typically requires a Test of English as a Foreign Language (TOEFL) score of at least 79 for admittance, a community college might require a TOEFL score as low as 34 (R. Culverhouse, personal communication, August 27, 2020). This open admissions policy offers opportunities to students who might otherwise never earn college credentials, while creating serious challenges when providing effective outreach, onboarding, and advising services to the diverse populations entering community colleges. The community college welcomes all learners regardless of preparedness but does not always have systems in place to provide the support necessary to ensure the academic success of such a diverse population.

A Note on Inclusivity

Throughout this document, the gender-neutral pronoun "they" is used as a modern replacement for the traditional but less-inclusive "he/she" (American Psychological Association, 2019). As a natural consequence, the plural pronoun may not always agree with a sentence's singular antecedent.

<div align="center">

Statement of the Problem

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Many students who apply to college never set foot in the classroom, and of those who do, a significant number do not persist through their second semester. Though the literature addresses both problems individually, there is a gap in the literature about the importance of considering these areas as a single system.

From the moment a potential student applies to a community college to the completion of their first semester, they are often confronted with numerous obstacles that prevent a smooth transition to the second semester (Acevedo-Gil & Zerquera, 2016; McFadden, 2016). These obstacles take many forms. The student may suffer from resource shortages or lack knowledge of the process. The student might be academically underprepared. In addition to personal obstacles encountered by the student, the college might use messaging that is inconsistent or unclear, or its communication and outreach are incorrectly targeted. Many times, multiple college offices require documents from each student. Academic advising can be infrequent or inaccurate. Early alert systems might be inadequate or nonexistent.

From the fall semester to the following spring, as many as 42% of students at public community colleges may not return to campus (Holder et al., 2016), and of those who do stay, only 28% earn a credential within three years (National Center for Education Statistics, 2021). Only 34% of entering students in 2021 reported that a college employee discussed non-academic factors that might impact their performance, such as family, work, and basic needs (Survey of Entering Student Engagement, 2021).

Community colleges periodically employ new initiatives to address individual pieces of these pre- and post-matriculation periods of a student's academic journey. Such strategies include implementing strategic enrollment management to bring more students to campus and to retain them, introducing course-pairing to increase developmental English results, hiring success coaches to improve advising, or utilizing Guided Pathways to stimulate graduation rates (American Association of Community Colleges, 2014; Crawford & Jervis, 2011; Hanover, 2014; Wood, 2021). However, looking at pre-matriculation and post-matriculation as a unified block of the student's journey and considering them as a continuous experience is rarely discussed in the

literature. While several nationwide initiatives exist to address separate components of pre-matriculation and post-matriculation, a review of the literature in this area suggests that few colleges intentionally approach the problem as a whole.

For the purposes of this study and the convenience of discussion, these phases of the student's academic career will be known as "pre- and post-matriculation," a designation representing approximately six months before the student sets foot on campus to six months after their initial day of class.

Background of the Problem

This study considers the pre- and post-matriculation time frame to be the most critical segment of a student's entire academic career.

The Pre-Matriculation Period

Six months prior to the first day of college classes is a likely time period during which most students apply for admission, complete the FAFSA, visit campus, and submit required paperwork. Yet, after that initial application process, many of the students never enroll in a single class. Castleman et al. (2013) and Field (2020) referred to this phenomenon as "melt." Students melt when they intend to earn college credit but fail to register for any coursework (Rall, 2016). O'Connor (2018) described melt as the phenomenon in which students "leave high school with plans to attend college and never arrive at any college campus that fall" (para. 3). Adult students could melt due to lack of adequate childcare, transportation, or technology. The majority of melt occurs among minority and low-income students (Georgetown University, 2020) and is in part attributed to the "flood of forms" a college applicant must complete for admittance (Gehlbach & Page, 2018, para. 2). One such form is the Free Application for Federal Student Aid (FAFSA). Guzman-Alvarez and Page (2021) report that the FAFSA forms of 60%

of Pell-eligible students are flagged for auditing (compared to 20% who are not Pell-eligible), and of those, 25% fail to complete the verification procedure correctly and thus miss out on Pell funding. The FAFSA requires levels of credentials and personal records that many families— particularly undocumented students' families—do not maintain. As highlighted earlier, there are many reasons a student might melt, resulting in a situation in which the "average institution fails to convert roughly half of their applicants into enrolled students by the first day of the fall semester" (Bevevino, 2016, para. 1).

The Post-Matriculation Period

An equally critical period begins the first day of class and appears to last through the second semester. During this post-matriculation period, attrition is high. The literature has chronicled these challenges well (Braxton et al., 2000; Tinto, 1993; Watson, 2013). Well-known obstacles include lack of resources, inadequate advising, and a bottleneck of developmental coursework—to name only a few. Recent national data from the Community College Survey of Student Engagement (CCSSE) indicated that almost one-third of students received "very little" help in coping with non-academic responsibilities, and over 40% reported that an advisor reached out to them only once or not at all during their first semester (CCCSE, 2022). These factors add up. After two years of community college, only 13% of entering students graduate; even after four years, the number increases only to 28% (Kraemer, 2013). More than one-third do not even return for a second semester (Holder et al., 2016). Poor retention rates remained remarkably stable at community colleges from 2009 to 2020 (Habley et al., 2012), at 51.3% and 52.4%, respectively (Gardner, 2020). Overcoming structural barriers (see Definitions below) is a key factor in determining if a student completes a second semester, thereby increasing their odds of overall completion (Holder et al., 2016; Levesque, 2018; Matthews et al., 2022). The problem

is even more acute for students of color and those of low-income households, who often lack the social and financial resources to succeed in an inefficient and confusing academic environment (Bailey et al., 2015). Students who are deemed "not college-ready" must pass through a gauntlet of developmental education classes in English and math, which lengthens their time in college, increases their costs, and decreases their likelihood of graduation (Long, 2014). This has led to the co-requisite trend of placing students simultaneously in a developmental course and a freshman-level course.

Post-matriculation barriers are more within the college's ability to control than the barriers students encounter in the pre-matriculation phase since students are enrolled and therefore more immediately reachable. Before a student arrives on campus, the college has limited influence on the student experience. But that shifts in the college's favor after the student begins the registration process.

Strong practices become increasingly important at this juncture. For example, a lack of personalized advising results in decreased student persistence, with Scrivener at al. (2015) pointing to the national average of one community college advisor for every 441 students. Colleges could work toward bringing that ratio more in balance to address a post-matriculation barrier. Fiscal and human resources can assist in this area, but adequate funding does not guarantee student success. These challenges are not exclusive to the small college or to colleges with modest budgets. Even at large, well-funded community colleges, many students spend over four years obtaining a two-year degree (Texas Higher Education Coordinating Board, 2021).

Building a bridge that connects students' initial application for admission to their second semester in college is not a construct frequently discussed in the literature. Digital transformation (Dx) is a relatively new pursuit in higher education. Grajek and Reinitz (2019) describe Dx as

shifts in technology "that enable new educational and operating models and transform an institution's operations, strategic directions, and value propositions" (para .1) This study examined how the participating colleges were able to link isolated programs to provide a cascading effect that resonated across the pre- and post-matriculation time frame.

Purpose of the Study

The purpose of this study was to describe the characteristics of pre- and post-matriculation efforts that internal stakeholders believe to consist of strong practices to improve the student experience. A strong practice—rather than a "best" practice, which implies an unequivocal and universally accepted ranking—is an activity historically and statistically demonstrated "to achieve positive changes in student attitudes or academic behaviors" (Arendale, 2010, p. 1). This study also focused on whether sample institutions have integrated these practices into a system. The study sought to examine the traits of select institutions that have taken programmatic components and united them into a cohesive design that improved student success. To that end, the research explored the practices at those institutions and made inferences about the role of institutional culture on those practices. Ultimately, the study intended to illustrate the characteristics of a holistic system of strong practices that could be replicated and adopted elsewhere.

Research Questions

This study answered several questions that could lead to a more complete understanding of the pre- and post-matriculation experience and to a description of the process that could then be reproduced. Crowe et al. (2011) emphasized the importance of a qualitative study in answering *what, how*, and *why* questions when describing a phenomenon in the context of which it occurs.

Question 1: Which strong pre- and post-matriculation practices do study colleges perceive they have implemented?

A robust and highly effective outreach, enrollment, and retention system is not created overnight. Understanding the pre- and post-matriculation system's origin story and chronicling the stages of its development will lead to a much more complete understanding of how it obtains results. This study explained specific steps taken by each college to create its current, high-functioning program, how these practices were implemented, and how the college measures the results of these strong practices.

Question 2: What strong practices do study colleges have in common?

Finding common characteristics among the colleges in this study was critical to the construction of a working model that can be put into practice elsewhere.

Question 3: What is the relationship between institutional culture and pre- and post-matriculation interventions and systems?

Hearing college staff and administrators describe the environment of their program provided insight into the type of cultural foundation required to support a successful pre- and post-matriculation system. This question identified cultural factors that contribute to a successful pre- and post-matriculation system.

Theoretical Lens

This research drew on systems thinking, which Bridgen (2017) described as "an area of inquiry through which one attempts to understand the wholeness of scientific and social problems" (p. 10). According to Cuofano (2022), systems thinking is a "holistic means of investigating the factors and interactions that could contribute to a potential outcome" (para. 1). Because most colleges consider their pre- and post-matriculation methods as separate pieces, it is

important for this study to view those components, as Checkland asserted (1981), as a functioning whole, keeping in mind that "systems usually accommodate more than one purpose (Bridgen, 2017, p. 11). Systems are also highly complex. Because systems are designed, built, and activated by human beings, they are at least partially subjective and sometimes difficult to define:

> This process can't be described in neat increments. It occurs in the tangled webs of relationships--the networks--that characterize all living systems. There are no simple stages or easy-to-draw causal loops. Most communication and change occur quickly but invisibly, concealed by the density of interrelationships (Wheatley & Kellner-Rogers, 1998, para. 12).

Conceptual Framework

For a conceptual framework, this study employed Bolman and Deal's Four Frame Model of Understanding Organizations (2013). By examining the experiences of this study's sample colleges through four distinct yet connected frames, common traits were identified. The work of Bolman and Deal served as the lens through which the pre- and post-matriculation systems of three colleges were studied. It is based on the concept of four frames (Bolman & Deal, 2013).

Table 1: Four Frames of Understanding Organizations	
Structural	- policies and procedures - strategic plan - departments and committees
Human Resources	- relationships - motivations - agendas
Political	- alliances - agreements - expectations
Symbolic	- institutional artifacts - traditions - culture

The *structural frame* encompasses those components that are task-oriented or physical in nature, the "how things are done" inside the organization, from interdepartmental communications to the strategies for achieving long-term goals. It is procedural and driven by data to identify and close gaps. The *human resources* frame considers the subjective nature of those within the organization, including their ambitions, biases, and fallibility. It is fluid in and responds to changes in the employee environment. The *political frame* accounts for the influence of interest groups, external stakeholders, and the opportunity to build coalitions, both inside and outside the college. It is diplomatic and entrepreneurial. Finally, the *symbolic frame* recognizes the college's intangible artifacts, the importance of its history, and its unspoken rules. It is cultural and resistant to change.

The most successful efforts at transformational changes are those that, among other things, satisfactorily address the concerns of multiple frames (Phillips & Baron, 2013; Lyon et al., 2014). The Bolman and Deal four-frame model is further explored in Chapter 2.

Methodology

Because systems are best understood in context of their environment, this research employed qualitative techniques to gather first-person accounts of pre- and post-matriculation strong practices at three colleges. The criteria for the selection of these institutions were:

1. The institution is a public community college.

2. The institution is a member of Achieving the Dream (ATD). ATD is "a national movement to help more community college students, particularly low-income students and students of color, stay in school and earn a college certificate or degree" (University of the District of Columbia, 2016, para. 1).

3. The institution participates in SENSE and/or CCSSE data surveys. The SENSE survey "is a well-established tool that helps institutions focus on good educational practice and identify areas in which they can improve their programs and services for students" while the CCSSE survey "helps community colleges discover why some entering students persist and succeed and others do not" (Center for Community College Student Engagement, 2022).

Systems thinking informed the questions posed to key personnel from each institution (Yin, 2017). The interview questions can be found in Appendix A. From there, the study was built on the patterns and themes emerging from the interviews. The interviewees included a combination of front-line staff, middle managers or department heads, and upper administrators. The themes were interpreted using the four frames of understanding organizations, proposed by Bolman and Deal. Identified themes addressed the research questions.

Delimitations

This study was delimited to three specific, public two-year colleges with enrollments between 4,000 and 14,000 students. The study depended upon a non-probabilistic convenience sample, and as such, the results were considered indicative but not definitive. The theoretical framework was delimited to systems thinking, while the conceptual lens was Bolman and Deal's four frames.

Assumptions

The information provided by the college personnel during the research process was assumed to be accurate. Though the perspective of those interviewed can never be entirely objective, it was assumed that the interviewees spoke from a position of truthfulness and candor,

with no agenda to alter the study's results or to misrepresent the state of practices within the pre- and post-matriculation phases.

Significance of the Study

The purpose of this study was to describe the characteristics of pre- and post-matriculation efforts that internal stakeholders believe to consist of strong practices to improve the student experience. Colleges often focus on individual, usually disconnected elements intended to remove specific barriers to student success. A working pre- and post-matriculation model, based on best and promising practices as identified in the present study, could provide a unitary package that could be deployed in place of the current a la carte method often found in community colleges. While community colleges engage with a revolving door of new achievement strategies, "they have frequently directed them at one segment of the student experience…and they have generally reached a relatively small number of students" (Bailey, 2017, p. 37). The study contributes insight into new pre- and post-matriculation systems and provides a blueprint for colleges seeking to improve efficiency and outcomes for those areas. Beneficiaries of this study are those colleges seeking an efficient, data-informed experience in the outreach, onboarding, and advising processes, to name only a few.

Definition of Terms

Code – In qualitative research, a code is synonymous with a label. A code is used to "tag a concept or a value found in a narrative or text" (DeVault, 2019, para. 3)

Community College Survey of Student Engagement (CCSSE) – The CCSSE survey "helps community colleges discover why some entering students persist and succeed and others do not" (CCCSE, 2022).

Continuous Quality Improvement (CQI) – CQI is "a circular process of goal-setting, followed by external and internal evaluations resulting in improvements that can serve as goals for a next cycle" (Rohlin et al., 2002, p. 67).

Holistic advising – A college advisor practices holistic advising when they look beyond academic factors and attempt to provide for student needs both inside and outside the classroom (Kardash, 2020).

Intrusive advising – Sometimes used synonymously with holistic advising, intrusive advising represents those attempts to connect frequently with a student throughout the semester and to pair them with services they might need to overcome barriers to degree completion.

Melt – A student is said to "melt" when they apply for admission to a college and intend to become a student but do not complete the onboarding process (Castleman et al., 2013).

Survey of Entering Student Engagement (SENSE) - The SENSE survey "is a well-established tool that helps institutions focus on good educational practice and identify areas in which they can improve their programs and services for students" (CCCSE, 2022).

Strategic enrollment management (SEM) – SEM is an "institution-wide responsibility" that attempts to achieve marketing, enrollment, and retention goals in accordance with the college's strategic plan, drawing on the cooperative expertise of different offices and departments (Wilkinson et al., 2007).

Strong practice – For purposes of this study, a practice is considered "strong" if it meets the majority of these criteria, as defined by Bowman (2016): (1) it focuses on a particular problem; (2) it adapts through inquiry; (3) it encourages collective ownership; (4) it involves a mix of partners; (5) it commits to implementation; and (6) it provides a solution or a structure for

decision-making. What is subjectively considered a strong practice by a particular institution may not actually meet the parameters of this definition.

Structural barriers – When the design of the structure of a system is inefficient, biased, or difficult to navigate, it can create a barrier to student engagement (Matthews et al., 2022).

Systems thinking – a collection of parts that are interacting and interdependent pieces of a complex whole with a unified purpose (Kim, 1999).

Theme – Though definitions vary by author, themes are generally "abstract and subtle expressions/processes that explain a phenomenon" (Mishra & Dey, 2022, p. 188).

Wraparound services – When a college provides students with non-academic assistance, such as with basic needs insecurities (BNI), mental health, transportation, or childcare, it is said to be offering wraparound services (Dembicki, 2019).

Organization of Study

The study follows a logical progression, divided into five units. Chapter 1 introduced the question by discussing its significance, posing relevant research questions, and defining relevant terminology. Chapter 2 provides a survey of the scholarship that help inform the study's research questions. Chapter 3 describes the methods applied and the data-collection process. Chapter 4 sets the interview questions within the context of Bolman and Deal's Four Frames of Understanding Organizations, analyzes the interview data, and extrapolates that data into themes or strong practices, which respond to the three research questions. Chapter 5 summarizes the study's findings. It also presents the implications of this study for practice and further research into pre- and post-matriculation practices.

Chapter Summary

Community college students often follow an uneven path to registration, and this discourages many of them from completing the process. Of those who do attend the first day of class, many do not persist due to shortcomings in the college's support network. This study considers the pre- and post-matriculation time frame to be the most critical segment of a student's entire academic career and attempts to identify those obstacles encountered by students in these periods, such as resource shortages, lack of knowledge, and inadequate support systems through qualitative techniques that impact their success. This chapter explained the nature and purpose of the study, the problem it addresses, and the research questions that determined its direction. Systems thinking was best suited to examining interconnected pre- and post-matriculation processes. The study's conceptual framework utilized Bolman and Deal's four-frame model to better understand the systems in place at colleges that were identified by experts as high achieving in the areas of pre- and post-matriculation. Additionally, this chapter addressed the study's delimitations, assumptions, and overall significance.

Chapter 2 - Literature Review

This literature review and analysis illuminated the research topics by examining the literature of the *initiatives* and the *practices* that frequently affect the student's pre- and post-matriculation experience. Just as a strategy is comprised of individual tactics, so too is a pre- or post-matriculation initiative comprised of various strong practices. Special emphasis was placed on integrative practices. This review explored four such initiatives after an overview of strong practices currently in use at community colleges. Along the way, the review highlighted reoccurring themes that helped direct the study's trajectory. The chapter concludes with an exploration of systems thinking and the conceptual lens through which this study was viewed, Bolman and Deal's Four Frames of Understanding Organizations.

The sources explored in this review range from the foundational (1972) to the contemporary (2022), representing a broad range of scholars whose work primarily deals with student success within community colleges. Historically, the focus and goals of the different college departments have evolved from the fundamental (e.g., increasing enrollment) to the nuanced (e.g., transgender student support), and this study attempts to understand how that evolution has led to the creation of robust strategies for removing barriers to academic success. Sources included in this review are peer-reviewed journals, white papers, dissertations, and media articles, grouped according to theme and explored chronologically within those groups.

Strong Practices in Pre- and Post-Matriculation Periods

A strong practice is an activity that meets the majority of these criteria, as defined by Bowman (2016): (1) it focuses on a particular problem; (2) it adapts through inquiry; (3) it encourages collective ownership; (4) it involves a mix of partners; (5) it commits to implementation; and (6) it provides a solution or a structure for decision-making. It is important

to note that what is considered a strong practice by a particular institution may not actually meet the parameters of this definition. This review of the literature unearthed several strong practices that have been linked to student success during the pre- and post-matriculation timeframe.

Accessible Language

Academic jargon is often an overlooked barrier to student success. The specialized language of academia, like that of other professions, becomes second nature to practitioners and is a necessary shorthand when discussing matters specific to higher education. This has created what Rushmore Kidder (1991) referred to as "footnote mentality," which functions well for college policymakers and faculty members but should be abandoned entirely when engaging with the college's most important member: the student. The offices of financial aid, admissions, and the bursar must evaluate their communication methods and the language they use for inclusivity and accessibility. Too often, the correspondence from a college campus is infused with barrier words, daunting checklists, invisible biases, and restrictive phrasing (Marcus, 2015). The language used and the information presented by the typical community college are not tailored to those who most need community college services. Johnston (2019) accused college communications of being "puzzles of almost comically complex words and pedantic phrases" (para. 8). Johnston's work provides numerous examples of impenetrable language that can dissuade students from completing the many forms required for college admittance. Wandel and Taylor (2021) specifically examined letters written to students to explain the implications of loans and debt and found that the majority of those letters were "not readable" by the average first- or second-year college student. The problem is pervasive enough that it has become the object of jest for non-practitioners, as evidenced by the creation of an Educational Jargon Generator (Allan, 2020).

One example of the misuse of jargon is found in the financial aid component of the student's application process. What should be a milestone in the student's pre-college journey—receiving an award letter—is instead a significant obstacle. Even worse, sometimes the colleges intentionally create this barrier with confusing language designed to obfuscate costs. For example, a 2018 study by Burd et al. analyzed the financial aid award letters of over 500 different colleges:

- The colleges used 136 unique terms for an unsubsidized loan, and of those, 24 did not use the word "loan" at all—even though the award was, indeed, a loan.

- As many as 70% of the letters failed to explain the difference between a loan, a scholarship, a grant, and work study.

- Sixty percent did not provide a summary of how much the student would need to pay to attend.

- Of the 40% that did calculate final cost, the colleges used 23 different ways to arrive at that amount.

That award letter is only a single piece in a multi-faceted process that begins with the student's application for admission and ends on the first day of class. The literature indicates that external communications could be rewritten and redeployed in a such a way that they make a student's journey as simple and predictable as possible.

Career Pathways

A career pathway, also known as a guided pathway, is a framework of reform in which community colleges attempt to create a clear lane from high school to a career. Unlike other strong practices discussed in this review, a guided pathway is not so much an intervention as it is a restructuring of a system and a redistribution of resources, specifically designed to remove

barriers to student success. A career pathway is built around a career-focused and competency-based curriculum, stackable credentials, and an intensive student support structure (Bragg & Krismer, 2016). Pickel and Bragg (2015) demonstrated that a pathways model "can help practitioners become more equity minded" (p. 52) as they analyze data and guide students through post-matriculation phases. Adult Basic Education (ABE) courses that matriculate to college credit can also fit the pathways model. As of spring 2021, over 400 colleges were actively engaged with the formal Guided Pathways movement, with many more attempting to introduce variations of it on their own (Community College Research Center [CCRC], 2021). Due to the years-long demands of implementation of Guided Pathways and that is scaled to apply to all students, "it is difficult to construct randomized controlled trials that prove its efficacy" (CCRC, 2021, p. 5). However, research by Belfield et al. (2019) used nine early momentum metrics (EMMs) to measure gateway course completion, credit accumulation, and fall-to-spring persistence to indicate that these EMMs can predict a student's future completion of Guided Pathways programs. In other words, though it is difficult to measure the effects of Guided Pathways as a whole, researchers can use EMMs within Guided Pathways to predict its results. The authors of the study were able to align the features of Guided Pathways with their analysis of "how meeting EMMs influence success" (Belfield et al., 2019, p. 11).

Cross-Training of Employees

When employees are cross-trained, financial aid staff can correctly answer basic student questions regarding admissions, and advisors possess knowledge of financial aid requirements. At institutions with highly compartmentalized offices, silos prevent ready communication, which in turn results in common student complaints and excessive "melt"—or students who apply to the college but do not end up registering for a class. One strategy to counter this result is to

cross-train all front-line employees, so that the staff in admissions understand the basics of financial aid, and advisors have a firm understanding of the registration process and student loans. Everyone who deals face-to-face with students can be trained in multiple disciplines. This decreases student wait time and student melt (J. Cardenas, personal communication, April 22, 2021).

Also known as "interprofessionalism," cross-training not only improves collaboration and institutional efficiency, it increases employee motivation and job satisfaction (Bleich, 2018). Tim Brown, CEO of international design firm IDEO, coined the term "T-shaped" to describe an employee who is cross-trained: the horizontal line of the T is that person's primary job function, while the vertical line represents two areas of "de-jobbing," in which that person is able to engage in other parts of the operation with empathy, knowledge, and skill (Hansen, 2010). After the student arrives on campus, intrusive advising and holistic support services ensure that they have the best chance of completing that first semester and continuing on to the second. North Arkansas Community College enjoyed a 10% increase in student retention within two years of implementing a personalized and "caring" advising strategy, and at Clark College students who interacted with support services were demonstrated to persist from one term to the next at a higher rate (Achieving the Dream, 2018). In these cases, the system works. Getting that system into place—and harnessing campus-wide support for transformational change—remains the challenge. This study intends to describe the characteristics of that system so that other institutions may improve their pre- and post-matriculation processes.

Culture of Change

Research Question 3 focuses on institutional culture. It is important to provide key points from the literature regarding culture and transformation. All institutions exhibit one or more

cultural types, and that culture evolves over time and through a progression of personnel (Vaughan,1992). A culture is built on a series of values, assumptions, and policies, each reinforcing the other. Problems with a stagnant culture occur, as indicated by Nelson (1998), when there is a "disarticulation" between a diverse student body and the institution's tradition-rooted practices (p. 77).

In the early 2000s, campuses began reimagining the culture of their workplace, which in turn changed the dynamic with the student population. Weinberg (2005) described the 2002 efforts by Colgate University to "remake [the] student affairs program" (p. 24). Beginning with the correct assumption that a student's life outside the classroom had a direct impact on what happened within the classroom, officials at Colgate transformed their culture into something called "residential education," or "an ongoing quest to capture all the educational moments that take place as a student spends time on campus" (p. 24). Advisors and front-line staff at Colgate changed their method of operations by asking constant questions: What do students do, and want to do, outside the classroom? Rocha et al. (2022) stated that this type of "culture of transformation…can enhance students' educational outcomes" (p. 456), particularly if agents of the college cultivate a space that connects with students' personal experiences. This speaks directly to the aforementioned holistic services and active advising.

Noting the critical nature of community college culture and student engagement, McClenney and Greene (2005) observed that "whether it is the best of times or the worst of times for today's community college students depends primarily on how their stories unfold in the days and weeks immediately after they step through the open door" (p. 2). The authors built their study on the stories of two students. The experiences of those students were reflections of the college culture they encountered. Crafting the stories around CCSSE data from two dozen

focus groups, McClenney and Greene concluded that colleges must change their culture so that they become proactive systems that connect with students rather than passive processes that expect students to complete a series of steps:

> The stories reinforce the critical importance of engaging students—connecting them early and often to one another, to faculty and staff, and to the subject matter of their studies. If nothing else, the stories emphasize the reality that in community colleges, given the multiple commitments of their students and the challenges they bring with them to college, engagement does not happen by accident. It must happen by design (McClenney & Greene, 2005, p. 3).

Diversity, Equity, and Inclusion

Community colleges are taking action to address issues connected to diversity, equity, and inclusion (DEI). Differences in the educational experience for minority students as compared to white students are "the product of systemic failures in K-12 and postsecondary education" (Brock and Slater, 2021). The goal of a college's DEI initiative is best described by Brathwaite et al. (2021):

> … to build and maintain an engaging campus environment that intentionally rectifies historical and current discrimination and neglect experienced by racial and language minorities, first-generation college goers, and individuals from low-wealth backgrounds so that they feel welcome, prepared, and supported to achieve their college and career goals (p. 29).

These efforts are increasingly important, as Carnevale et al. (2016) pointed out that colleges have historically adopted practices that produce results that are imbalanced along racial, gender, and socioeconomic lines. Community colleges can provide economic recovery and

revitalization to their service areas by enabling equitable access to their programs (Fink & Jenkins, 2020). Lin et al. (2022) called DEI a "primary focus" of community colleges, as they seek to address well-documented gaps in the success rates of different student groups (p. 1). Colleges continue to adopt equity statements as part of their mission and vision and to restructure their enrollment, advising, and support networks to rectify long-standing deficiencies in educational equality (Neal, 2022).

First-Year Seminars

A first-year seminar, also known as a student success class or freshman framework, is designed to assist incoming freshman with skill-building and to arm them with the knowledge needed to succeed. First-year seminars have been shown to positively impact engagement, retention, and overall student success (Stephens & Revell, 2011). A first-year experience (FYE) seminar is often combined with focused faculty development for FYE instructors. Tailored experiences like this are designed to match a student's on- and off-campus schedule and their specific demographic and learner type. This replaces the "one size fits all" model and further strengthens it by providing instructors with up-to-date training on how best to deliver the curriculum. Some colleges have taken the first-year seminar a step further by pairing FYE with an integrated learning center that offers a fully array of student services, resulting in up to a 4% increase in fall-to-spring retention after introducing this model (CCCSE, 2012).

High School Partnerships

The outreach component of a college's pre- and post-matriculation efforts can focus on building relationships with students before they graduate from high school. Over 70% of high schools in the nation offer some form of dual-credit courses (Field, 2021). Those high school students who are concurrently enrolled in college classes are more likely to persist and to

accumulate credits at a community college (CCRC, 2018), and summer bridge programs for high school students improve first-year student success (Barnett et al., 2012). Participating in concurrent or dual-credit classes also improves the persistence and success rates of Black and Hispanic students, specifically (Xu & Fink, 2019).

Inquiry and Involvement

As valuable as analytics might be, the college CEO who depends only on data to make decisions will never be as transformational as the one who also understands the value of constant curiosity and inquiry. New knowledge sources are constantly appearing. One key technique for leading a college through substantive change is to "ask questions of the right people—and those people may be outside the executive council and board of trustees" (Graham, 2021). The "right person" might be a student or that student's mother. It might be a groundskeeper. It might be a colleague with an innovative perspective from outside academia.

Deaver (1997) suggested that leaders of dynamic organizations must be aware of the need for continuous learning to shepherd an institution through any kind of transformational development. That learning often requires the leader to relinquish some control and invest team members with authority to make decisions, especially when those decisions involve student support and other front-line issues (Eddy & VanDerLinden, 2006). Providing holistic services and high-frequency advising requires inquiries to be made regarding the lives of the students the college serves, so as to tailor services for each individual and to remove specific barriers standing in their way. The informed leader learns to adjust strategies so as to help transform an institution:

> Without strong senior leadership, reforms cannot add up to what every student needs, because community colleges are traditionally decentralized in too many ways—

curriculum, hiring, budgeting, and professional development are frequently driven at the

department level, and thus may not easily cohere and serve a change agenda. In the end,

reform strategies require visionary senior leadership (Wyner, 2021, p. 5).

Personalization

Students are more than just data points reported to IPEDS every year; they are real people

with real problems. The "open door" gives community colleges the advantage over universities.

Community colleges have the opportunity to get to know students on a personal level, to make

connections with them that will alter the trajectory of their lives. The ability to develop sincere

interpersonal relationships has been identified by the American Association of Community

Colleges (2018) as a basic competency of an effective institutional leader. Providing a

personalized experience to students removes barriers to success, as evidenced by results that are

both anecdotal (Truong, 2018) and quantifiable (Deacon et al., 2017). In their study of

academically at-risk students, Deacon et al. found that students receiving personalized outreach

in their first semester were more inclined to visit an academic advising center and take advantage

of the services offered there. There is certainly value in obtaining pages of data, but pre- and

post-matriculation will succeed only if academic leaders understand and make frequent use of

what Roueche (2021) referred to as the human touch.

Shortened Degree Programs

Cho et al. (2012) demonstrated that students in accelerated programs were more likely to

remain enrolled for the spring semester than those developmental students not assigned to such a

program. A shortened or accelerated degree plan can take many forms. One form combines a

condensed developmental education program with a first-year learning community (Hanover,

2014). Ferguson et al. (2015) found that faculty generally reported that students in accelerated

courses performed better than students in traditional developmental courses. Understanding that developmental education can present an insurmountable barrier for certain students, colleges have started to "course-pair" or "co-req" their developmental and freshman-level composition and math courses. Students share a cohort in both classes, usually taught by the same instructor.

Other types of shortened degree programs permit students to finish a traditional 16-week semester is five, eight, or ten weeks (Loraine County Community College, 2022). Students can take intersession courses over the winter break (Lone Star College, 2009) or on weekends only (Nassau Community College, 2022) to accommodate their schedules.

<div align="center">Integrative Practices and Initiatives</div>

A review of the literature highlighted four broad initiatives that incorporate many of the aforementioned strong practices, along with additional practices, to improve student recruitment, outreach, onboarding, advising, retention, and success. These included continuous quality improvement, integrative advising, integrative support services, and strategic enrollment management.

Continuous Quality Improvement

Using strong practices means striving continuously for improvement. When discussing continuous quality improvement (CQI) in the classroom, Maguad (2003) defined "quality" as "meeting or exceeding customer expectations" (p. 413). Colleges gauge the effectiveness of programs by frequently assessing results against established benchmarks, depending on a variety of data to remain informed.

Vroeijenstijn (1995) defined the three common objectives of CQI in higher education: (1) accreditation, or external evaluation; (2) accountability, or return on investment; and (3) autonomy, or self-regulated internal procedures.

Figure 1: Continuous Quality Improvement Process, adapted from Rohlin (2002)

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                        ┌──────────────┐
                        │   Quality    │
                        └──────────────┘
                        ↙              ↘
              Internal                      External

         ┌──────────────┐                              ┌──────────────────┐
         │  Monitoring  │                              │  Accountability  │
         └──────────────┘                              └──────────────────┘
                                                       ↗
         ┌──────────────┐        ┌──────────────┐      ┌──────────────────┐
         │   Student    │        │ Peer Review  │ ───→ │   Improvement    │
         │  Evaluation  │        └──────────────┘      └──────────────────┘
         └──────────────┘                              ↘
                                                       ┌──────────────────┐
         ┌──────────────────┐                          │  Accreditation   │
         │ Self Evaluations │                          └──────────────────┘
         └──────────────────┘
                                                              Objective
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Colleges engage actively in CQI for any or all of those reasons. A case study by Antons and Maltz (2006) focused on enrollment management's dependence on data mining. Their model correctly predicted the success rate of the majority of the students in the study based on factors such as high school GPA, minority status, financial aid awards, and geography. Drawing on that data, college staff were able to adjust and customize financial aid packages to deliver the desired enrollment numbers and success rates. This complex level of analytic application isn't possible without a robust institutional research component and a state-of-the-art student information system (SIS). Anderson (2008) stressed the need for active institutional research offices, when working in concert with others as part of a student success initiative, to provide data that are more than just numeric points on a graph. It has been said that "the second most important asset an institution of higher education has is data. Students are most important but can't be fully served without understanding who they are and what motivates them. That takes data" (R. Voorhees, personal communication, June 24, 2021). The collecting of data to inform

instructional practices has long been considered a strong practice in education and is, at certain institutions, mandated by policy (deMonsabert et al., 2022). Each data group has a backstory. It's not enough to know that 61% of students are female and 39% are male. To meet the college's objectives, the "why" behind that disparity must be brought into focus. Once an institution is able to start identifying its "whys," it can begin to tell its unique story, and that story is what perpetuates student enrollment. As entrepreneur Simon Sinek (2009) has said, "People don't buy *what* you do, they buy *why* you do it." When employees buy into that "why," it affects their job performance by creating enthusiasm. Enthusiasm can positively impact a student's experience through improved customer relations (Allen, 2013; Fleener, 2017), especially when college employees and students participate in the same campus events. A 2010 study by Kompaso and Sridevi argues that a primary factor in improved employee performance was engagement in the workplace and with fellow employees. Bell (2021) indicated that students consistently reported a greater sense of satisfaction when faculty and staff demonstrated approachability and empathy, traits which communal campus events are designed to engender.

Taking this a step further, Dennis (2012) envisioned a level of student engagement known as anticipatory enrollment management, or AEM. Because of the rise of social media and the enormous amount of data it produces, it is now possible to track trends and prepare for new student groups before they arrive or to counteract enrollment downturns before they occur. Again, this level of advance response requires a great attention to analytical detail and a certain penchant for forecasting based on observable tendencies.

The findings of a study by Park et al. (2013) classified organizations into three types, depending on the focus of their quality improvement: the classroom level, the system-wide level, and the collective-impact level. The authors described common characteristics of institutions

intentionally dedicated to CQI. They determined that an emphasis on CQI does not necessarily mean all organizational processes are constantly growing; the process is gradual and incremental. Colleges with successful CQI initiatives are those that have pre-planned extensively and proceed with rigor and transparency.

Perhaps due to the pandemic and its effects on college enrollment, 2021 saw many publications in pre- and post-matriculation studies. College administrators, recruiters, and admissions officers are currently living in a time when "comparing year-over-year data [is] not as useful when the climate has shifted" (Hutton, 2021, p. 24). Historic data are not as predictive as they were pre-pandemic. Colleges are now depending on such innovations as short surveys sent via text message to the study body, hoping to collect enough real-time data to make informed decisions about revenue and how best to meet stakeholder needs. This may mean that existing practices are changing or new strong practices are emerging as a result.

Many institutions have had to completely reimagine their existing initiatives in response to marketplace uncertainties. In 2019, Missouri State University began to phase in a bold new strategic enrollment management program (SEM), investing heavily to ensure future growth based on data trends. But in 2020, the university "transitioned into crisis mode" and put SEM entirely on hold. MSU is currently in the process of introducing a highly modified SEM, one built around the "fluidity challenges" of a post-pandemic environment (Hornberger, 2021). Enrollment continues to decrease across all sectors of higher education, with a 3.4% drop at community colleges in fall 2021, following a similar period of decline the previous year (NSC Research Center, 2022). For the foreseeable future, pre-matriculation efforts are depending on innovation and trial-and-error to offer a course correction until the student marketplace returns to more predictable patterns—if indeed those patterns ever reemerge.

Colleges that strive toward optimal efficiency in their operations understand the importance of CQI and depend on data to make informed decisions. These institutions do not wait until the required ten-year regional reaccreditation period to produce data and act on them, but constantly engage in self-assessment in order to find better ways to meet strategic goals.

Integrative Advising

Colleges that reimagine their approaches to student services must invest in human capital and be willing to disrupt stagnant advising practices. This idea is not revolutionary or new. As Richard Light pointed out over 20 years ago, "Good advising is the single most underestimated characteristic of a successful college experience" (Light, 2001, p. 81). Light is the Carl H. Pforzheimer professor of teaching and learning at Harvard. His seminal work, *Making the Most of College: Students Speak Their Minds* (2001), is one of Harvard's three best-selling books of all time, and it won the Stone Award for best book of the year on education. While researching the manuscript, Dr. Light visited over 90 colleges and interviewed hundreds of students, instructors, and staff members. In his estimation, "good academic advising ranks number one" (p. 84) of all possible influences on the life of a college student.

One year after Light's publication, Heisserer and Parette (2002) further explored this notion as it relates to what Glennen and Baxley (1985) and Earl (1988) termed "intrusive advising" and argued that students are more likely to meet benchmarks across a variety of metrics if they feel that someone in the college community cares about them and has invested time in their success. That "someone" plays a considerable role in the student's tenure at the institution. Thomas and Minton (2004) pointed out that clear boundaries are still important, but the effective advisor is able to establish those boundaries while still creating a relationship that is built on mutual trust and genuine care. This type of advisor proactively contacts students and

assesses their needs to provide customized service and timely intervention. Varney (2007) likened intrusive advising to a "pre-emptive strike" taken by active advisors before students reach critical points on their academic path.

A milestone on the way to this "high-touch" advising practice was the Appreciative Advising model of Bloom et al. (2008). The authors outlined six phases of the process: disarm, discover, dream, design, deliver, and don't settle.

1. Disarm. A welcoming environment creates a strong first impression.

2. Discover. Open-ended questions and active listening provide students opportunities to explore strengths and ideas.

3. Dream. Developing a visual map of student goals allows them to see and achieve benchmarks along the way.

4. Design. A strategy for success provides the student and the advisor with shared access to a complete plan.

5. Deliver. Both parties have a stake in the strategy and commit to achieving it.

6. Don't settle. Constant encouragement inspires the student throughout their time at the college—and possibly beyond.

This type of advisor is cross-trained as a relationship-builder, as specialized skills are required to assist a student along a multi-staged experience. Conklin (2009) cast such an advisor in the role of a "life coach," and Fowler and Boylan (2010) underscored the importance of "frequent and relevant contact" between these coach/advisors and students. At least two studies used the increasingly popular term of "intrusive advising" when discussing the need for proactive guidance to keep students on the path to academic success. A report titled "A Matter of Degrees," published by CCCSE, explored how a hands-on approach at various institutions led to

marked improvements at getting students to complete their first year of college—and those students "have a nearly 90% likelihood of graduating on time (within three years)" (p. 28). Continuing that theme, Varney (2012) highlighted several characteristics of this high-frequency, hands-on advising, such as intervening to enhance student motivation, strategizing to show interest and involvement with students, advising to increase the probability of student success, working to educate students on all options, and approaching students before situations develop.

Karp (2013) stressed the importance of a holistic approach to meeting these goals, noting that fragmented student services do not provide the framework necessary for a student to understand the connections between their home life, their academic life, and their future life in the labor market. Multiple offices and disconnected programs must give way to a centralized, target-oriented core. Also bearing consideration is that at-risk students are less likely to seek academic assistance. Murray and Tuck (2014) underscored the importance of a high-frequency advising strategy to help mitigate the factors impacting these at-risk students, demonstrating that it led to increased student retention and degree completion.

Thimblin (2015) suggested that students need to have the advising brought to them directly through classroom visits, early alert systems, frequent check-ins, and targeted orientation programs. These activities help establish a safety net around the student. The students are not on their own; someone is there to help them every step of the way. The intrusive advisor knows those steps before the student walks them, as "proactive and meaningful engagement with students allows advisors to anticipate student concerns" (Sutton, 2016). New research in the coming years will likely demonstrate the effects of the COVID pandemic on the role of the advisor in student success.

In a traditional advising model, contact between advisor and student is infrequent (Fosnacht et al., 2017), with only one or two meetings each academic session. Regular and meaningful meetings are a key to the nontraditional advising model—whether that is known as intrusive, high-frequency, or high-touch. The exact traits of this model were enumerated best by Rowh (2018):

1. Robust technology. Effective advising depends on data analytics.

2. Early intervention. Advisors make contact before the student is at risk.

3. External support. Holistic services provide solutions to off-campus challenges.

4. Careful communication. Intrusive advising doesn't need to be literally intrusive.

5. Campus-wide buy-in. This level of advising is shared across the institution and is not owned by the advising office.

Mu and Fosnacht (2019) drew data from 156 institutions to chart positive relationships between advising frequency and student performance. The authors defined intrusive advising as a model in which contact is initiated by the advisor rather than by the student, usually at pre-defined junctures in the student's academic career.

Nowhere are these ideas expressed more boldly than at Amarillo College, perhaps the only college where "love" is built into the institution's mission and vision. Constructed on a "culture of care," Amarillo College personalizes each student's journey. Extensive surveys of Amarillo College students indicated that "the top ten barriers to classroom success had nothing to do with the classroom" (Lowery-Hart, 2020). In other words, students viewed off-campus such as basic needs insecurities and childcare as more pressing than on-campus challenges such as scheduling and test-taking. The college meets those needs by applying its unusual institutional values: Fun, Innovation, Family, Yes, and "Wow."

Innovative values such as those adopted by Amarillo College provide students with "skills that increase their autonomy and confidence in their academic abilities" (Virtue et al., 2021, p. 213). This has changed the way advisors approach students. Advisors no longer strictly deal with making schedules for students and reviewing degree plans. They now keep an eye on services that might assist a student with non-academic needs. This shift is not exclusive to Amarillo College. At Heartland Community College in Illinois, the evolving role of the advisor resulted in a title change from "academic advisor" to the more appropriate "student advisor," as every aspect of the student's life, both on- and off-campus, was the new mission of the college (A. Goben, personal communication, February 7, 2022).

Active student advising, though it goes by many names, represents a fundamental shift in how colleges view their students—no longer as customers but instead as partners along a shared education path. Personal relationships generate wins for both sides; the student completes the academic cycle, and the college benefits from that in many ways. This type of advising requires a heavy financial and time investment that may not be feasible for colleges with limited resources. However, the return on that investment is almost always remarkable.

Integrative Support Services

Support services include practices that provide a type of safety net for students who are at risk of not continuing in coursework due to factors not always confined to the classroom. If a student is not attending classes regularly, the reasons might be related to events in the student's personal life. Students benefit from early and consistent class attendance, as there is a direct connection between regular class time and academic performance (Kassarnig et al., 2017). Colleges have also explored peer tutoring as a method to assist at-risk students in successfully

completing coursework. Khalil (2022) showed that students who frequently attended peer-tutoring sessions outperformed students who attended less regularly and were more inclined to persist.

At-risk community college students need what is now known as "wraparound" services. Anything that presents an off-campus or non-curricular barrier to student success falls into this category of need. Overcoming these obstacles means that colleges must consider providing non-academic support in several areas not historically the purview of the institution: free or low-cost childcare, mental health services, food pantries, stipends for gas, and assistance with utility bills. Goldrick-Rab and Cady (2018) found that as many as 54% of students surveyed had experienced some form of food insecurity, and 11% reported being homeless within the prior year. Other alarming figures included 28% who had failed to fully pay utility bills and 12% who had moved in with friends or family due to financial challenges. A 2019 Pew study found that 20% of dependent students—those living with their parents—lived below the poverty line, and as many as 42% of independent students suffered from poverty (Fry & Cilluffo, 2019). Those numbers are almost twice those of 20 years ago. Airhart (2021) indicated that students were just as concerned with basic needs (32.7%) as they were with academic needs (32.3%). In the past, these students would have received significant needs-based assistance from the Department of Education. But federal aid is no longer enough. In 1975, the average Pell grant covered 79% of a student's college expenses. By 2017, the average Pell award provided for only 29% of a student's expenses (Protopsaltis & Parrott, 2017).

Though community colleges are more likely than four-year universities to enroll at-risk students, they receive less state and federal funding to meet those students' needs. While total investments per student at a university is around $14,000 per year, the amount spent annually on

ensuring a community college student's success is $10,000 (Dembicki, 2019). Any college hoping to make up for this difference will need to take creative countermeasures. At Amarillo College, support staff in the fall 2017 semester contacted over 800 students who had at least one dependent and an income under $19,600 to ensure that everyone was aware of the services available to them. That bears repeating: every single student in that particular at-risk category was personally contacted by someone at the college and made aware of the free support they could receive so that they could continue to attend class. The heart of the college's campaign is an advocacy and resource center, which not only provides students with wraparound services but also connects those students to further assistance with over 60 nonprofit, community, and state programs. The resource center has paid for temporary housing when students had no homes; it has given them laptops; it has literally put food on many tables. Operating under the resource center's banner are a campus-supported legal aid center, counseling center, employment center, and childcare center. These efforts pay real dividends. Students taking advantage of the resource center's wraparound services have a 36% higher retention rate than do students who do not make use of what the center offers (Crowley, n.d.).

One Million Degrees (OMD) is a nonprofit in Chicago that provides wraparound services to community college students. A randomized trial conducted by the University of Chicago's Poverty Lab found that OMD's work "substantially" improves enrollment, retention, and graduation. Participating in OMD's program increased a student's odds of earning a degree in three years by 18% (Weissman, 2021).

With a commitment to solving students' non-academic problems with creativity and care, a college can markedly improve retention, performance, and completion in its most at-risk populations. There is no magic bullet that can demolish all poverty-based barriers for students at

every campus. Each setting is unique. Only by drawing upon data and understanding students'

real-life needs can a college begin to embark on such a wholesale transformation.

Strategic Enrollment Management

The idea of "longitudinal care" links strategic enrollment management directly to

intrusive advising. "The radical underlying commitment of enrollment management is its

unswerving focus on the longitudinal care and comprehensive education of students" (Keller,

1991, p. 3). Since its inception in the early 1970s, strategic enrollment management (SEM) has

been defined as a process that uses analytics to align the offices recruiting, registration, advising,

and financial aid to increase enrollment and improve student success. The term itself was coined

in the late 1970s as institutions such as Boston College and Carnegie-Mellon created new offices

specifically charged with developing far-ranging systems to interpret student data and respond to

it accordingly (Hossler, 1996).

Formal definitions of SEM were offered by Kreutner and Godfrey (1981), Kemerer et al.

(1982), and Hossler (1984). These studied agreed that SEM increases student headcount and

improves semester-to-semester completion rates by synchronizing the efforts of several

traditionally disconnected services, including (1), marketing and recruiting, (2) orientation

programs, (3) financial aid, (4) advising, (5) tutoring, (6) institutional research, and (7) student

services.

An effective SEM initiative depends on the constant collection of data by all departments

across campus and a coordinating utilization of those data. SEM examines trends (enrollment,

demographics, occupations, retention), constraints (money, staffing), and competition (colleges,

industry), then directs recruitment strategies accordingly. The SEM approach relies on extensive

market research, intensive internal data analysis, and interviews with a wide array of stakeholders. Its success is measured in retention and graduation rates.

Ingersoll (1988) constructed a matrix in which institutional variables such as instruction time, service costs, and facility expenses were compared against student variables such as drop rates, student loans, and scheduling. Connections made from this and other models may have resulted in increased expenditures in student services(Wagener & Lazerson, 1995). At the end of an assessment cycle, SEM-forward institutions can begin to visualize the impact this increased attention has on academic programs and even pinpoint specific actions, such as curriculum planning and syllabi redesign, which in turn can increase faculty buy-in and collaboration (Stevenson, 1996).

Peters and Keihn (1997) conducted a case study of the University of Wisconsin's multi-year SEM initiative and directly connected several positive outcomes to those efforts. Monetary support per student (inflation-adjusted) increased from $2600 to $3000, while the gap between state and national support per student decreased from $1200 to $0. Similarly, student-faculty ratio improved from 19:1 to 17:1. In cases such as this, SEM directs money to increase enrollment and provide for more comprehensive student support. Because the strategy attacks the enrollment issue on multiple fronts, the college's chances of closing achievement gaps are improved. SEM ensures that the institution's marketing team has access to the same data as the registrar's office and the financial aid office. Money can be deployed in concert rather than in compartmentalized bursts, so that a uniform plan is no longer the exclusive responsibility of a single office but is now driven by diverse experts from across campus. Kalsbeek (2001) referred to this as "de-jobbing," or shifting from silos and rigid structure to a more fluid model in which responsibilities depend on the need of a shared outcome rather than on departmental loyalties.

Bailey at al. (2015) suggest that "cross-functional teams" of faculty and professional staff can "create more innovative and integrated products and solutions" (p. 156).

Black (2004) noted that SEM is, at its core, a type of relationship management. SEM has to be more than simply market analysis and service optimization. To effect meaningful change in "increasingly diverse segments of the student population," SEM must "reach farther and deeper within an institution than it has to date" (Black, 2004, p. 39). Those relationships depend on a personalized or tailored approach to each unique student group. One key component of SEM is an emphasis on personalized orientation programs or on outreach specific to key groups. Freshman orientation events are not one-size-fits-all. Retaining students into their second semester depends, in part, on engaging them during their *first* semester. It's important that the needs and expectations of African American students and Hispanic students, and traditional and nontraditional students, are seen as distinct and addressed very early in the academic journey. All activities and outreach can be redesigned with particular populations in mind. Bontrager (2004) outlined the goals of such a customized enrollment management plan: (1) establish clear goals for types of students needed to fulfill the institutional mission, (2) determine, achieve, and maintain optimum enrollment, (3) generate added net revenue for the institution, (4) increase process and organizational efficiency, (5) improve service levels to all stakeholders, (6) create a data-rich environment to inform decisions and evaluate strategies, and (7) build and strengthen linkages with functions and activities across the campus.

A propensity for interpreting data is not enough. Leadership plays a significant role in the effectiveness of any long-term SEM project. Flanigan (2016) demonstrated that the role of the college president or CEO directly affects the ability of a SEM initiative to succeed; that leader's behavior and leadership efforts positively or negatively alters the results. The CEO is the key

player in changing a college's culture and in encouraging its often reluctant faculty and staff to embrace change. Walleser (2018) likened this reluctance to Peasant Theory (2018) when she describes her experience of introducing substantial SEM changes at her institution. Most front-line college employees do not believe they have the power to enact change, and they prefer a default position that is static and waiting for instruction. At best, they are open to change but unaware of their role in it. At worst, they live in denial and actively resist change. The CEO's task, then, is to understand this mode of thinking and be equipped to deal with what Rothwell et al. (2015) called "change management." The ability to coax an organization into substantial transformation is especially important when dealing with the common criticisms of a SEM rollout, as chronicled by Smith et al. (2020): too many meetings, too expensive, too protracted, too time-intensive. The authors underscored the importance of a thoughtful change management strategy for any college president considering a SEM deployment. Faculty members are key to this process, playing an important role in any successful enrollment management program and its ongoing productivity. Smith (2007) argues that faculty members should be included in the planning from day one, as they "are surprised when they learn how data driven strategic enrollment management actually is, or is intended to be. When engaged, these faculty members often become SEM ambassadors within the institution's academic environment" (p. 40).

Strategic enrollment management is, in many ways, the sum of its parts. SEM involves cracking open recalcitrant departments and combining efforts from previously partitioned units. A concentrated endeavor that has a complete grasp of its institution's data can successfully predict patterns of student behavior. This, in turn, increases enrollment as a result of more refined targeting, marketing, recruiting, and advising. Every second, the average person generates 1.7 MB of data (Domo, 2020). Because college-age students are likely to be highly

connected to technology, that number is even higher for their demographic (Bray, 2020). This provides ample information for colleges that depend on data to make decisions for pre- and post-matriculation programs. Providing easy and user-friendly access to important information is known as *democratizing data*. This means that colleges "use solutions that enable them to intelligently provide everyone with access to needed institutional data they need" (Howells, 2021). A 2021 whitepaper by Microsoft described four levels of data use in higher education, from data as a *system of record*—a mere collection of information—to the highest level, a *system of intelligence*—in which the college can automatically generate "a package customized to a student's specific needs or prescribing steps that might help improve retention and completion" (Microsoft, 2021, p. 8). SEM is a powerful tool for those colleges able to restructure outdated paradigms and garner stakeholder support, though in a post-pandemic academia, SEM will need to become even more agile to be effective.

Systems Thinking

Kim (1999) suggested that "we live in an event-oriented world, and our language is rooted at the level of events" (p. 4), so systems thinking is a very important tool because it provides for an understanding of the underlying structure not instinctively considered. If existence of a system can be verified and its elements be shown to work cohesively, this study asked the how and the why behind that success. Systems thinking was established in 1956 by MIT professor Jay W. Forrester. An early pioneer of computer engineering, Forrester later transitioned to the MIT Sloan School of Management, where his work in supply chains and organizational thinking led to the development of systems research and the founding of system dynamics. Aronson (1996) explained the difference between traditional thinking and systems thinking:

Traditional analysis focuses on separating the individual pieces of what is being studied;

in fact, the word "analysis" actually comes from the root meaning "to break into

constituent parts." Systems thinking, in contrast, focuses on how the thing being studied

interacts with the other constituents of the systematic set of elements that interact to

produce behavior of which it is a part (p. 1).

Defining A System

Systems thinking can be applied to situations with multiple moving parts and points of

input. It provides all stakeholders with a view of the "big picture," while they are normally

confined to a view only of their immediate area of responsibility. In basic terms, a "system" in

this sense is a collection of parts that are interacting and interdependent pieces of a complex

whole with a unified purpose. Applied to a holistic and integrated pre- and post-matriculation

strong practices, these parts might include the offices of advising, financial aid, marketing,

admissions, and business. Together they form a network designed to recruit, enroll, and

matriculate students. The unified purpose is student success. Those offices, though they may

function entirely independently of one another on any given day, are nonetheless dependent on

all other offices to advance a student through the college process. Given this, an integrated pre-

and post-matriculation experience is an excellent example of a "system," as defined by the

literature. According to Kim (1999), a system has four defining characteristics. First, systems

have a purpose. The different offices at a community college may have individual objectives, but

their shared "meta" objective is to assist the student in obtaining educational credentials. Second,

all parts must be present for the system to produce. No one college office can meet that meta

objective on its own. Each contributes a necessary service that, if not provided, prevents the

student from advancing. Third, the order in which the parts are arranged affects the system's

output. A student must interact with the college experience in a particular order. A few of the steppingstones include completing the FAFSA, obtaining a parking permit, and purchasing textbooks. Different college representatives are trained to assist a student with each of those items. Normally the completion of one item "unlocks" another. For example, a student cannot acquire an ID card until they have met enrollment requirements. This linear process works well until one element breaks down, at which point every successive step is affected. Finally, a system attempts to maintain stability through assessment. Colleges are required periodically to assess nearly every aspect of their operational methods as part of the reaccreditation cycle. This provides ample opportunities for each department or system part to receive feedback on itself and analyze its methods. By this definition, a pre- and post-matriculation process would need to meet those four criteria to be considered a system by this definition.

Any set of experiences can be explained by examining the events, patterns, and systemic structures of that phenomenon. While events are the visible "tip of the iceberg," they are generated by the structure of the system underneath. *Events* are the most visible occurrences and often the only thing a person chooses to observe. At a community college, an event might be that a student drops out of a class midway through the term or an advisor helps a student create a course schedule. *Patterns* emerge when care is taken to group events together, revealing trends. Such a pattern could be that students are dropping out of developmental English much more often than other classes or that an advisor is creating similar course schedules for the majority of the students to whom they've been assigned. *Systemic structures* are the offices or entities that generate the patterns. If students are dropping developmental English, what is it about the instructors, the curriculum, or the course delivery that is creating that pattern? If students are

accumulating unnecessary credit hours on their transcripts, what is happening in the advising office to contribute to this trend?

Conceptual Framework

Miner (2005) described organizational analysis or organizational theory as an investigation of an organization's behavior, nature, and environment, intended to assess how systems and functionality influence output and results. One such analysis was published in 1991 by Lee Bolman and Terrence Deal in *Reframing Organizations: Artistry, Choice, and Leadership.* The Bolman and Deal Four-Frame Model of Understanding Organizations is the tool with which systems thinking will be applied to the three colleges explored in this study. A "frame" is a lens through which one gains perspective on a given scenario.

In the classic 1950 film *Rashomon*, directed by Akira Kurosawa, various witnesses each describe a very different version of the same murder. Individually framed by the camera, the characters take turns relating their perspective of events. That framing is important, as only a single character is involved in each recounting of the homicide. The witnesses have different motivations and different reasons to conceal or reveal pieces of the truth. The film becomes a perfect analogy for the tool developed by Bolman and Deal, the Four-Frame Model for Understanding Organizations, as multiple participants in any given situation will express diverse opinions and beliefs, based on their role in the organization, the objectives of their department, and their own ideas of success. The only way a leader can hope to organize and operationalize these many agendas is by framing them to understand them, as underscored by Dr. Göran Carstedt, entrepreneur and former executive at Volvo and IKEA:

> The world simply can't be made sense of, facts can't be organized, unless you have a
> mental map to begin with. That theory does not have to be the right one, because you can

alter it along the way as information comes in. But you can't begin to learn without some concept that gives you expectations or hypotheses (Hampden-Turner, 1992, p. 167).

The four-frame model is such a map. The creators of the model "deliberately mix metaphors" (Bolman & Deal, 2013, p. 10) when referring to the model not only as a map but also as a lens, prism, perspective, window, or tool, because all of those are just a way of reminding the end user of the necessity of re-envisioning a given situation through a new way of thinking. This is known as "reframing" or breaking old frames. In *Rashomon*, the full picture isn't understood until an alternate point of view or frame is introduced, one that reveals earlier inconsistencies and is a more complete version of the truth. Similarly, within any organizational process, the situational clues need to be set within the context of a frame to be understood. Dane and Pratt (2007) referred to this frame as a "deeply held, nonconscious category or pattern" (p. 37). What leaders must avoid is a kind of anchoring, in which they draw conclusions based on what response is popular or the least likely to foment unease among stakeholders. The larger the organization, the more complex the relationships and the more interwoven the consequences of a proposed change—and the greater the chances of a "Rashomon effect." Reframing is important because it affords one the opportunity to imagine a solution or answer that might at first glance seem impractical. Sticking with the old frame is always the path of least resistance, and so "most of us passively accept decision problems as they are framed, and therefore rarely have the opportunity to discover the extent to which our preferences are *frame-bound* rather than *reality-bound*" (Kahneman, 2011, p. 367).

Table 2 depicts the four frames and how they can be used to interpret actions and motivations within the context of a particular system.

Table 2: Four Frames of Understanding Organizations - Expanded			
Lens	Structural	Human	Political	Symbolic
Metaphor	Machine	Family	Jungle	Temple
Change Agent	Architect	Catalyst	Advocate	Prophet
Assumptions	Institution exists to achieve goals. Procedures are defined to generate results.	People comprise the institution. Success happens when people's needs align with institution's goals.	Interest groups vie for resources. Alliances create strength and produce results.	Much is open to interpretation. Success is created by understanding anchored beliefs.
Actions	Create processes. Plan. Reorganize. Refine policies.	Invite participation. Empower. Train and coach. Address needs.	Build alliances. Negotiate. Network with others. Anticipate conflicts.	Honor tradition. Inspire. Express vision. Use stories, heroes, and symbols.

A *metaphor* is a storytelling tool that allows the institution to explain its results in an accessible narrative, rather than solely with data.

A *change agent* uses an archetype to describe the common characteristics of anyone utilizing that frame to institute transformational change. For example, if the change agent within an organization is a visionary who inspires those around them, they are serving as a "prophet" and depending on the symbolic frame to produce results.

Assumptions are common ways to explain results within that frame. For example, if a department fails to meet its quarterly goals, the political frame could be used to describe the

various interest groups that vied for resources and thus affected the group's progress toward its goal. On the other hand, if the department met its objectives, it might be due to well-defined operating procedures (structural frame).

Actions are samples of typical strategies undertaken within that frame to provide the best chances of success. A department that emphasizes the human frame, for example, would empower its members to act on their own initiative by giving them the coaching they need, by demonstrating empathy, and by providing positive reinforcement when they succeeded.

Chapter 1 introduced each frame. Alone, a frame offers a window into the motivations of particular groups or into the output of certain organizational elements. But as Dunford and Palmer (1995) pointed out, leaders utilizing multiple frames in decision-making produce greater positive effects than those depending on only one. Thompson (2000) found that Bolman and Deal's model has "much to contribute to our understanding of leadership behavior" because it combines theory with "conceptually and empirically defensible classification procedures" (p. 987). Another strength of the model is its ability to provide an understanding of relationships within a proposed change initiative. By taking a multiframe or balanced approach, leaders are more apt to guide their organizations to successful transformation. A quantitative study by Phillips and Baron (2013) supported the conclusion that leaders performed more efficiently if they used paired or multiple frames when guiding their institution through periods of change. McArdle (2013) agreed, writing, "clearly, this skill of multiframing will be needed for the presidents and their administrative leaders to meet these future challenges" (p. 861).

Bolman and Deal's work has been successfully used to integrate complex changes on college campuses by helping an "institution negotiate the challenges inherent in a major curricular reform initiative and move towards constructive change and positive outcomes" (Lyon

et al., 2014, p. 31). When launching a new initiative, it is important to provide support for the existing structures, as different stakeholders naturally tend to defend their assigned territory against disruption. By framing these structures using multiple frames from the Bolman and Deal model, college leadership can ease those fears by creating recognizable parameters within the proposed change. The pre- and post-matriculation systems of the colleges described in this study were examined for effectiveness through the four lenses of the Bolman and Deal conceptual framework.

Chapter Summary

This review and analysis examined the literature of initiatives and practices that affect the pre- and post-matriculation experience of students, focusing particularly on integrative practices. It explored four integrated initiatives, highlighting reoccurring themes, and used Bolman and Deal's Four Frames of Understanding Organizations as a conceptual lens. It looked at sources from 1972 to 2022, ranging from peer-reviewed journals to dissertations, and discussed topics such as including accessible language, career pathways, cross-training of employees, and a culture of change. The review discussed the results of implementing these initiatives in higher education. Each initiative draws upon strong practices to succeed. Strong practices have been linked to a likelihood of removing barriers to student success (Bontrager, 2004; Massa, 2012; Gianoutsos et al., 2021). The "worldview" employed by this study was systems thinking, so that the normally disconnected components of holistic pre- and post-matriculation strong practices could be observed as a whole, then gauged for efficacy through the lens of Bolman and Deal's Four-Frame Model of Understanding Organizations.

As has been illustrated in this review, community colleges employ diverse strategies (i.e., initiatives) and tactics (i.e., practices) to smooth the recruitment and onboarding process, to

utilize effective advising strategies, and to retain students into the second semester and beyond. Proven methods exist for each of these ventures. But combining two or more of these initiatives into a seamless whole is something not discussed in the existing literature. Research studies surveyed in this chapter tended to focus on one particular aspect of the student journey without a direct connection to how pre- and post-matriculation phases might interact. According to systems thinking, because the stages are dependent on one another as part of a system, they should be examined for how they perform as a combined entity. Chapter 3 surveys the methodology used to describe the characteristics of those colleges with active and intentional pre- and post-matriculation systems.

Chapter 3 - Methodology

This chapter is an overview of the study's purpose, research questions, methodology, and conceptual framework. It explains the rationale for the selected methodology and describes the study's participants, setting, and survey instrument. The chapter concludes with a discussion of the data collection process, quality, trustworthiness, ethical considerations, and the study's limitations.

Purpose and Research Questions

The purpose of this study was to describe the characteristics of pre- and post-matriculation efforts that internal stakeholders believe to consist of strong practices to improve the student experience. This study also focused on whether the participating institutions have integrated these practices into a system. Rather than building a piecemeal process, a high-performing college could implement a system that might unify the different initiatives and entities involved in these processes to present students with a consistent and streamlined experience. This study investigated the creation of those systems and the predominant culture of those colleges that encourages the systems to flourish. The study's objectives were explored through the following research questions:

Question 1: Which strong pre- and post-matriculation practices do study colleges perceive they have implemented?

Question 2: What strong practices do study colleges have in common?

Question 3: What is the relationship between institutional culture and pre- and post-matriculation interventions and systems?

Theoretical and Conceptual Frameworks

Because this study examined the traits of colleges' pre- and post-matriculation efforts as a single system, it employed systems thinking as a theoretical lens. Systems thinking was introduced in Chapter 1 and fully described in Chapter 2. It is a "way to look holistically at how distinct components are related and how, when combined, they create a particular outcome" (Murphy, 2022, para. 4). In a pre- and post-matriculation system, those components include any combination of personnel involved in the pre- and post-matriculation processes. Though each functions independently of the other, all work together toward a shared outcome. By addressing the three research questions, this study attempted to determine if the participant colleges have implemented holistic systems, as previously defined in Chapter 2.

Bolman and Deal's Four Frames of Understanding Organizations was also introduced and then detailed in Chapters 1 and 2, respectively. Sriram and Farley (2014) explained that these frames are "translatable to student affairs practice" (p. 109), enabling this study to observe the pre- and post-matriculation at participating colleges through those lenses. Each of the four frames informed the research study in a particular way: The *structural frame* was important because it involves the college's policies and processes, and these directly shaped the institution's pre- and post-matriculation system. The *political frame* was particularly useful, as departments in institutions of higher education tend to create silos to protect their own interests, often at the expense of communication. The *human resources* frame examined the cross-training of employees and the role they play within the system. Finally, the *symbolic frame* was used to gauge the prevalent culture at each of the participating colleges and determine what, if any, transformational changes occurred prior to the installation of the pre- and post-matriculation

system. A matrix that indicates how the four frames interface with the research and interview questions can be found in Appendix B.

Research Design

This qualitative study was designed as a recursive process, one that seeks to understand the dynamics of a particular setting (Lewis-Beck et al., 2004). Schoch (2019) stated that the benefit of this study type is to provide a "comprehensive understanding of a bounded unit" (p. 246). Lochmiller and Lester (2017) argue that using qualitative methods helps provide answers to *why* and *how* something happened. As such, it seemed fitting to apply a qualitative study to an exploration of an optimal pre- and post-matriculation system. The study followed a logical path intended to provide a solid infrastructure for inquiry, as depicted in Figure 2.

Figure 2: Choices in Study Design, adapted from Yin (2010)

The researcher carefully considered the kind of data to be gathered. As Yin (2010) emphasized, "A major component in the structure, around which every empirical study pivots, consists of its unit of data collection" (p. 82). The researcher focused on three data collection units (DCUs) at the broad level (three participating colleges) and 14 DCUs at the narrow or inner level (see Study Participants). The primary function of designating DCUs is to "tighten the

relationship between the level of the data collection units and a study's main topic" (p. 87). These elements are detailed under Study Setting and Study Participants.

The researcher's rationale for these selections is explained below in Study Setting and Study Participants. Kurzel (1992) emphasized the importance of seeking out data that provide the "broadest range of information and perspectives on the subject of study" (p. 37). These selections were made so as to gain alternative vantage points of the pre- and post-matriculation systems and the culture surrounding them.

Qualitative research can illuminate the *meaning* of the events it describes. This quest for meaning is in fact the pursuit of *concepts* or ideas. In this study, the researcher illustrated the foundations of successful practice as a precursor to what the optimal pre- and post-matriculation system may look like.

An important goal of this heuristic study was to identify high-functioning pre- and post-matriculation practices that might be implemented at other institutions. This is an exploratory study to identify those perceived strong practices among individuals engaged in student success work within a reputational sample of community colleges. Other institutions must consider their own context if they decide to implement one or more of the practices uncovered by this research or if they seek to create or assess their pre- and post-matriculation systems. The description of successful pre- and post-matriculation systems can have implications beyond the campuses of the three participating colleges.

Study Setting

The institutions participating in this study were selected based on several criteria:

1. The institution was a public community college.

2. The institution was a member of the national Achieving the Dream (ATD) initiative.

3. The institution has participated in SENSE and/or CCSSE data surveys.

4. The institution has been identified by a panel of community college experts as being engaged in strong pre- and post-matriculation systems.

5. The criteria for selection were reputational.

A panel of community college experts consisting of former presidents of community colleges assisted in identifying the colleges included in this study (see Appendix C). Based on that expertise, three candidate colleges were identified. The panel members were asked to draw upon their extensive knowledge of the community college movement and select three institutions currently renowned as progressive trend-setters in the area of pre- and post-matriculation student success.

Initial contact with the participating colleges occurred through networking with colleagues, educators, doctoral program instructors, and other researchers. The researcher received written permission to conduct the study at each college and IRB approval from Kansas State University. The colleges and participants were anonymized, and all names replaced with codes, ensuring that no study findings could be traced to individual interviewees or the institutions at which they work.

Table 3 provides information on the three study colleges, drawn in part from the Carnegie Classification of Institutions of Higher Education (2022).

Table 3: Overview of Study Colleges					
College 1	**Basic Classification**	**Annual Enrollment**	**Achieving the Dream**	**SENSE**	**CCSSE**
	Associate's Colleges: High Transfer – High Nontraditional	~4,000	Yes	NA	2002-2021
		Instructional Program	**Enrollment Profile**	**Locale**	**Size and Setting**
		Associate's Colleges: High Transfer	Exclusively undergraduate two-year	Rural Fringe	Two-year, medium
College 2	**Basic Classification**	**Enrollment**	**Achieving the Dream**	**SENSE**	**CCSSE**
	Associate's Colleges: High Transfer – High Nontraditional	~7,000	Yes (Leah Meyer Austin Award recipient)	2015	2008-2015
		Instructional Program	**Enrollment Profile**	**Locale**	**Size and Setting**
		Associate's Colleges: High Transfer	Exclusively undergraduate two-year	City Midsize	Two-year, medium
College 3	**Basic Classification**	**Enrollment**	**Achieving the Dream**	**SENSE**	**CCSSE**
	Associate's Colleges: High Transfer – High Nontraditional	~14,000	Yes	2008-2012	2002-2022
		Instructional Program	**Enrollment Profile**	**Locale**	**Size and Setting**
		Associate's Colleges: High Transfer	Exclusively undergraduate two-year	City Midsize	Two-year, large

Study Participants

The individuals responsible for the development, deployment, and oversight of pre- and

post-matriculation strong practices at the three participating colleges were best equipped to

describe those interventions and how they functioned or do not function holistically. The researcher conducted a total of 14 semi-structured interviews with a combination of front-line staff members in admissions, advising, and other areas engaged in providing pre- or post-matriculation services; mid-level departmental directors; and executives at the vice president level. These individuals either operated within these interventions on a consistent basis or they were responsible for implementation and assessment—or both. All had insights to offer regarding the institution's culture and operating procedures.

Each institution had what Yin (2010) called a "gatekeeper" (p. 115), an individual who served as an initial point of contact and assisted in identifying potential interviewees. The researcher conducted 14 interviewees across three institutions. Though no formal number of interviews is required in a qualitative study, Lipsey (1990) suggested that the researcher decide on the number by considering the presumed variability in the differences in the sample population and in the researcher's level of confidence in the results. A pilot study preceding this research was not performed.

Protection of Human Subjects

Before beginning research, formal permission was obtained from Kansas State University's Institutional Review Board (see Appendix D) and from officials at the three participant colleges. This permitted the researcher to begin the interviews. The researcher protected all human subjects with informed consent forms (see Appendix E) and maintained their personal privacy and the confidentiality of any sensitive information they shared. All participants were permitted to withdraw from the study at any time. The researcher obtained the participants' permission to digitally record audio and video of the session, as well as an exact transcription—all of which greatly aided in ensuring the context of the exchange was accurately depicted in the

study. All information gathered over the course of the study was stored on an encrypted USB drive, which has been locked in a safe, where it will be kept for a minimum of five years.

Instrumentation

The researcher was the primary instrument for collecting and collating the data retrieved in this study. Interview questions were also used as an instrument to collect data. From those questions, the researcher noted patterns and reoccurring themes, which in turn helped create a blueprint of a high-functioning pre- and post-matriculation system. Interview questions (see Appendix A) were open-ended in design, allowing the dialogue to move organically in a conversational manner (Lochmiller & Lester, 2017). The interviews were semi-structured, as Adler and Clark (2008) indicated that modifications are possible during semi-structured interviews, allowing the researcher to adapt as needed during the process. Yin (2010) referred to semi-structured interviews as "qualitative interviews," and separated them from a more rigid format in two ways:

1. There was no script. Though the researcher followed a "mental framework of study questions" (p. 134), the specifics posed to each participant varied according to context.

2. The researcher attempted to build a "social relationship of sorts" (p. 134) with the interviewee, with characteristics of that relationship guiding the dialogue.

The nature of the conversation, and thus the instrumentation, was influenced by the culture of the setting (Spradley, 2016). In opening the interview, it was important for the researcher to give each participant room to reply in a comfortable and expansive way. Brenner (2006) referred to this instrumentation strategy as a grand tour of opening questions, with the questions becoming more specific as the session progressed. Along the way, the researcher

attempted to establish a rapport with each participant, one that was created on the shared experience of working at a community college and facing common challenges. In a healthy interview environment, this can create what Pulitzer Prize-winning journalist Isabel Wilkerson (2007) called an "accelerated intimacy" that helps provide useful and sometimes unexpected details to the conversation.

Data Collection and Data Sources

Through emails and phone calls, the researcher established contact with the aforementioned "gatekeeper" at each college and requested participation from the personnel described in Study Participants. Each potential participant received a description of the study and an explanation of why they were requested to provide an interview. With their permission, further information was given to them, including a written summary of the research protocols, a consent form, and potential interview dates (see Appendix E). These dates were flexible so as best to match the schedules of each participant. Those participants were the source of the study's data.

Each interview lasted for approximately one hour. The researcher informed the participants of the study's intent to collect and analyze strong practices in pre- and post-matriculation interventions and how their particular college was selected. When the participant was clear on the background and purpose of the study, the interview began.

All interviewees were asked to reply to the same set of questions, creating as much consistency as possible across interviews, but otherwise the conversation was open-ended. The questions were pre-approved by the study's major professor and the IRB. Because of the physical distances separating the sites, the interviews were conducted remotely through Zoom. The researcher compiled notes during the interview to provide additional commentary.

Data Management

Zoom software produced a verbatim transcription of each interview. The transcripts produced by Zoom were uploaded into coding software, MAXQDA (pronounced "max-q-d-a"), which was designed to assist in sorting information, coding interviews, and identifying patterns and themes.

MAXQDA was selected for this research for several reasons. It reads all file types (audio, PDF, handwritten notes, video, et cetera). It is more than a passive tool, but actively suggests codes and provides a narrative depiction of the data as patterns begin to form. Its paraphrasing tool is a particularly useful device that allows the researcher to condense large amounts of data.

Importing the transcription into MAXQDA was simple as dragging and dropping, at which point "the software automatically assign[ed] text passages to main categories or sub-categories," based on defined parameters (Kuckartz, 2014, p. 129). All paragraphs and lines were numbered for ease of reference. Text was searched, highlighted, and cross-referenced as needed. The primary benefit of MAXQDA at this stage was that it allowed the researcher to see the original text and categories simultaneously, without having to move back and forth within the transcription.

Data Analysis

Qualitative analysis was conducted in five phases, as suggested by Yin (2010). The first phase, compiling, meant gathering the data. Disassembling involved breaking down large amounts of data into separate groups, and then breaking those groups into smaller pieces. Codes were applied during this phase. Reassembling was the recognition of emerging patterns when the coded data were brought together. As depicted in Figure 2, the five phases did not necessarily

follow a linear progression during the research process, especially in the interpretation, disassembly, and reassembly phases.

Figure 3: Interactions of Analysis Phases, adapted from Yin (2010)

During the interpreting and concluding phases, the researcher employed inductive reasoning, allowing themes to emerge from the data without predetermination. Bingham and Witkowsky (2022) asserted that inductive reasoning is used in qualitative analysis as an effective "bottom-up" strategy, which permits forms and ideas to rise naturally from the body of collected data. The themes were grouped when appropriate to establish trends and to construct as detailed a description of the pre- and post-matriculation system as possible.

Emerging ideas were evaluated according to Bolman and Deal's four organizational frames, with each frame serving as a focal point for emerging themes. The MAXQDA software again aided in this part of the process, using a built-in feature that constructed a narrative of how the information evolved from coded data to a general category, and then to a specific theme, and then to an identifiable and describable result.

Bolman and Deal's four frames were matched to interview questions to illustrate their connection to emerging themes. These data informed the analysis of the three research questions.

Coded passages were sorted and grouped by theme, along with the researcher's notations, creating a matrix of interconnected data.

Thematic analysis was aided by built-in visualizations that took shape as the researcher worked through each line of the transcription. These visuals assisted the researcher in developing a storyline built around each research question. For all of its many features, however, MAXQDA remained only a tool to assist and inform. Based on the program's output, including coding and resultant themes that emerged, the researcher drew conclusions about the prevalence and importance of pre- and post-matriculation practices and initiatives at the participant colleges.

Study Quality

A study's trustworthiness is determined by the measures put into place to ensure quality control. Maxwell (2009) suggested seven strategies for ensuring this authenticity, each of which was an important building block in constructing a quality firewall for the researcher's work. *Comparison* means evaluating results against those of different groups. The use of *rich data* implies that the information obtained was detailed. Meanwhile, *respondent validation* implies that the interviews were accurately interpreted. Along the way, the researcher was careful to *search for discrepant evidence* to serve as a possible counterpoint to the study's findings. It was important that the researcher employs *quasi-statistics*, e.g., using numbers instead of adjectives to describe information (i.e., "only two" instead of "few"). All of this required *intensive long-term involvement* in the field to create a comprehensive picture of the situation at the three participant colleges.

Transparency was equally important. The researcher described the study in such a manner that others can easily understand its many components. Yardley (2009) underscored the importance of building a study in such a clear way that it can be accurately conceptualized by

outside observers. Every piece of relevant data should be made available. In addition to transparency, Kitto et al. (2008) suggested six quality criteria to which the researcher employed: (1) clarification and justification, (2) procedural rigor, (3) representativeness, (4) interpretative rigor, (5) evaluative rigor, and (6) transferability.

A quality study, according to Leung (2015), is one using appropriate tools and processes. Following Leung's recommendations, the researcher employed a methodology that suited the research questions and was designed with reliability in mind, while collecting data that were appropriate and pointed toward logical conclusions.

Ethical Considerations

Discretionary choices are part of all qualitative research; thus the researcher must ensure to maintain unimpeachable ethical standards. Yin (2010) suggested predefining "the circumstances under which any data are later to be excluded" (p. 39), ensuring that the researcher does not arbitrarily ignore results that do not support a built-in bias or agenda. The American Educational Research Association (AERA) (2011) outlined many different areas of exceptional ethical importance to researchers:

- responsibility to the profession
- obligation to all stakeholders
- ownership of intellectual property
- appraisal of research
- honesty in editing and reviewing

The researcher followed the ethical guidelines endorsed by the AERA and pursued all research with integrity and transparency.

Every researcher is obligated to limit personal bias. This is an active rather than passive endeavor, with self-awareness playing an important role. The researcher did not assume the position of advocate for any particular outcome nor created interview questions that were inclined to lead to a pre-selected destination. The purpose of this study was to describe the characteristics of a pre- and post-matriculation system that utilizes strong practices to improve the student experience, with particular focus on whether sample institutions have integrated these practices into a system. Within those parameters, there was no room for the researcher's personal preferences.

Limitations

The study depended upon a non-probabilistic convenience sample, and as such, the results can be considered indicative but not definitive. The findings may be transferable among community colleges with characteristics similar to those characteristics of colleges sampled in this study (see Table 3). Each individual's response to the interview questions was limited by the constraints and description of their role at their respective college. In the case in which a vice president or other administrator was interviewed, the information or insight they provided was filtered through the lens of their personal leadership framework and the aspirations they held for their institution. Because the interviews were conducted remotely, rather than in person, non-verbal communication cues were somewhat though not entirely limited. An additional limitation was the size of the sample, as only three institutions were examined. It would be inadvisable to generalize results drawn from a reputational sample to all the nation's community colleges.

Chapter Summary

The purpose of this chapter was to introduce the research context, including how the study institutions were selected, the demographic profiles of the study institutions and

respondents, how interviewees were selected, the justification for the research design and its limitations, and to introduce the interview protocol and the techniques used to analyze the interview data.

This study was heuristic in nature and employed qualitative interviewing techniques to explore the optimal pre- and post-matriculation system at three public community colleges that are members of the Achieving the Dream initiative. Through interviews with front-line staff, mid-level directors, and executive-level administrators, the researcher sought to identify strong practices and the culture that encourages them to flourish.

Chapter 4 - Research Results and Analysis

A review of the research questions and the data collection techniques begin this chapter, followed by a brief summary of interviewee demographics. This chapter provides an overview of the interview data using Bolman and Deal's Four Frames of Understanding Organizations (2013). It also explicates the qualitative techniques employed and a description of how data were validated, as well as a data analysis and a description of how that analysis addresses this study's research questions through themes and strong practices that emerged from the data.

Research Questions

This study describes the characteristics of pre- and post-matriculation efforts that internal stakeholders at selected community colleges believe rise to strong practices aimed at improving the student experience. For purposes of this study, a practice is considered "strong" if it meets the majority of these criteria, as defined by Bowman (2016): (1) it focuses on a particular problem; (2) it adapts through inquiry; (3) it encourages collective ownership; (4) it involves a mix of partners; (5) it commits to implementation; and (6) it provides a solution or a structure for decision-making. Students typically take an unnecessarily circuitous route from the moment they apply to college to the first day of class. Along the way, many opt not to continue the journey, as the path can be strewn with obstacles. While some obstacles to success are outside institutional control, many fall under the institutional purview. To describe the processes used by the colleges in this study to confront those obstacles, the following research questions are proposed:

Question 1: Which strong pre- and post-matriculation practices do study colleges perceive they have implemented?

Question 2: What strong practices do study colleges have in common?

Question 3: What is the relationship between institutional culture and pre- and post-matriculation interventions and systems?

Interview Data Collection

This qualitative study employed semi-structured interviews, conducted over Zoom video conferencing software, to collect data and information that could inform answers to the research questions. The questions were crafted so that each would align with one or more of Bolman and Deal's four frames. Audio recordings from each session were transcribed, and the researcher encouraged participants to speak freely of their college's processes, people, and culture. The semi-structured nature of the exchange included follow-up questions that further illuminated the data gathering process.

Participants

The researcher conducted 14 interviews across the three institutions selected for this study. The participants had an average employment tenure at their respective institutions of 6.8 years. They provided a broad view of the pre- and post-matriculation experiences, from the perspectives of a first-year assistant in student services to a vice president. Their roles spanned the outreach, onboarding, and advising processes as depicted on Table 4. Several interview participants were graduates of community colleges themselves and were thus able to provide a former student perspective as well as an employee perspective.

Table 4: Study Participants and Their Roles in the Pre- and Post-matriculation Phases			
Participant	**Self-Described Job Title**	**Time at Study Institution**	**Interact with Students Daily?**
A – 1	Registrar's Assistant	15 years	Yes
Role:	Register students for classes and help them complete degree plans		
A – 2	Student Services Director	6 years	Yes
Role:	Oversee all student services and ensure that all student needs are met		
A – 3	Assistant Director of Dual-Credit Programs	20 years	Yes
Role:	Provide holistic services (enrollment, basic needs, advising) for dual-credit		

Table 4: Study Participants and Their Roles in the Pre- and Post-matriculation Phases			
Participant	Self-Described Job Title	Time at Study Institution	Interact with Students Daily?
A - 4	Student Services Assistant	1 year	Yes
Role:	Assist students throughout the enrollment process in all phases		
A - 5	Coordinator of Outreach and Recruitment	1 year	Yes
Role:	Recruit students and walk them through enrollment and onboarding		
B - 1	Counselor	5 years	Yes
Role:	Advise, enroll, and provide clinical counseling for fine arts and honors students		
B - 2	Counselor	3 years	Yes
Role:	Advise, enroll, and provide clinical counseling for education and justice majors		
B - 3	Counselor and faculty member	7 years	Yes
Role:	Provide mental health outreach, advising, and student support assistance		
C - 1	Vice President for Student Services	10 years	No
Role:	Oversee the full range of the college's services for students		
C - 2	Lead Academic Success Coach	3 years	Yes
Role:	Provide holistic services (enrollment, basic needs, advising, et cetera)		
C - 3	Vice President for Academic Partnerships	4 years	No
Role:	Oversee all aspects of partnerships with high schools and industry		
C - 4	Coordinator of Recruitment	1 year	Yes
Role:	Recruit students and walk them through enrollment and onboarding		
C - 5	Registrar	1 year	Yes
Role:	Register students for classes and help them complete degree plans		
C - 6	Director of Student Support Services	19 years	Yes
Role:	Oversee the full range of the college's services for students		

Questions Within the Four Frames of Understanding Organizations

The interview questions were categorized according to Bolman and Deal's Four Frames of Understanding Organizations (2013). According to Bolman and Deal, "A frame…is a coherent set of ideas or beliefs forming a prism or lens that enables you to see and understand more clearly what goes on from day to day" (p. 41). The four frames are the political, the symbolic, the structural, and the human, as illustrated below (Table 5).

Political Frame

This set of questions addressed any alliances or cliques that might or might not exist at the participant colleges. The dynamics between competing or partnering groups within an institution can impact its policies. The interviewees were asked to discuss if local politics influenced decision-making and how different processes were deployed. These questions align with Research Question 1.

Symbolic Frame

The second set of questions moved from the concrete to the abstract, since the symbolic frame deals with an institution's traditions, unspoken rules, and history. The study participants were asked questions regarding their college's culture and the impact of that culture on policy and people. Bolman and Deal (2013) explained that the symbolic frame "focuses on how humans make sense of the chaotic, ambiguous world in which they live" (p. 244). These questions align with Research Questions 1 and 2.

Structural Frame

The third set of questions was designed to explore the *structure* of the institution, which encompasses the processes, the actions, and the "nuts and bolts" of student support. The structural frame places importance on organizing efficiently, putting the right people in the right roles, setting objective goals, and outlining clear policies. To this end, the study participants were asked to describe their understanding of the student's pre- and post-matriculation experience, their views of strong practices, and their opinion of possible barriers to student success. These questions align with Research Question 3.

Human Frame

The fourth set of questions was centered around the people who comprise the institution. When viewing an organization through this lens, the researcher was concerned with the effect of leadership on decision-making and with whether or not employees felt empowered within their respective roles. The human frame also examined the degree to which an employee's professional goals were in alignment with the overall goals of the institution. Bolman and Deal (2013) pointed out that organizations often view employees in one of two extremes: people are either "objects and tools" or they are full of "talent and energy" (p. 117). Either view can affect an organization's overall performance, as well as its culture. These questions, depicted on Table 5, align with Research Question 3.

Table 5: Interview Questions
Political Frame (RQ 1)
In your perspective, how are decisions about implementing and improving strong practices based on data and evidence made?
How would you characterize the voice that personnel in your immediate area have in the decisions the college makes?
Describe the cliques or groups exist at this college, if any. How do those alliances affect the college in positive or negative ways?
Symbolic Frame (RQ 1 and RQ 2)
How would you describe your college's culture?
What are the factors that contribute to that culture?
Has your college's culture changed? If so, how?
Structural Frame (RQ 3)
From the moment a student applies to your college until that first day of class, what is their journey like? How do they get from the application to the classroom?
What strong practices has your institution deployed to improve student outcomes, and of those practices, which do you believe has been the most successful?
What specific goals, if any, has your institution set in these areas? Have these goals been met?
Human Frame (RQ 3)
What role does the college leadership play in student success?
How does your institution strive to empower its employees as individuals? If it does, what are examples? If employees are not empowered, why not?
How are your professional goals aligned with the institution's goals? If so, how? If not, why?
Additional Questions

Table 5: Interview Questions
Please describe pre- and post-matriculation processes at your college. What is the level of integration between departments? What practices assist with cooperation or inhibit cooperation between the different offices involved in those processes?

Code Identification

To identify patterns and to apply codes, the researcher deconstructed the interview data. This process was streamlined by using a software tool called MAXQDA, which is designed to assist in data analysis through pattern recognition and coding support. The researcher interacted with the software first by uploading all interview transcripts, video captures, and audio recordings. Next, the researcher began to sort and organize the data in several ways: searching and labeling frequently mentioned words and phrases; manually highlighting responses that contained information that seemed particularly relevant to the research questions; and noting areas that might require further details or context.

During the second phase of the analysis, the interview data were coded. The researcher assigned specific codes to those grouped items. For example, forms of the word "empower" appeared 16 times in the interviews, so "empowerment" became the title of a code. MAXQDA then applied that code to all instances across all interviews. It allowed the researcher to extract those instances so that all related passages could be compared and contrasted.

The third phase involved returning to each of the 14 individual transcripts and reading them again in their entirety. The researcher then manually coded, highlighted, and annotated anything relevant that had been overlooked during the automated process. For example, if an interviewee stated that they "felt like decisions could be made locally without being micromanaged," the researcher would have tagged that for consideration under the codes for empowerment, leadership, and culture. Multiple codes might be applied to a single sentence.

Analysis of these codes led to identifying broader themes in the fourth phase of the process. These themes were created based on the instances and weight of a particular code. MAXQDA can be calibrated to apportion values to different codes. In Table 6, "instances" refers to the number of times a code was mentioned across all interviews, while "weight" is the number of individual interviews in which that code was discussed. Items appearing in fewer than half of the interviews (weight < 7) were not coded.

Table 6: Codes, Weights, Frames, Research Questions				
Codes	**Instances**	**Weight**	**Frames**	**Related Research Question**
Presidency	82	11	Human, Symbolic	RQ 3
Culture	60	11	Symbolic and Human	RQ 1 and RQ 2
Leadership	47	10	Human	RQ 1, RQ 2, and RQ 3
Training	28	10	Human, Structural	RQ 3
Data	34	8	Political and Structural	RQ 1
One-stop shop	17	8	Structural	RQ 3
Empowerment	17	7	Political and Human	RQ 1 and RQ 3

These occurrences are illustrated visually in Figure 4.

Figure 4: Frequency of Code Instances and Weights

Discussion of Results

Each code is supported by a number of direct statements from interviewees that provide

context and detail. Exploring these codes led to identifying themes that emerged from the data.

These themes are, in fact, strong practices that inform the research questions.

Presidency

The college presidency was the single most often mentioned factor when the interviewees discussed culture, success, student support, and strong practices in the area of pre- and post-matriculation. In Table 6, the presidency code has the highest number of instances and also the greatest weight. This indicates that it might be the leading cause of success in pre- and post-matriculation processes, underscoring what was discussed in the literature review of Chapter 2 about the importance of the college CEO setting a cultural tone that encourages staff to make data-based inquiries.

Wyner (2021) noted that, "Presidents are the key to building highly effective student-oriented cultures" (p. 3). Eleven interviewees talked about the impact their college president had on nearly every part of their job: advising, student interactions, and campus morale. The presidency was cited as the number-one factor that contributed to the college's culture. One respondent went so far as to say, "[The president's] goal for us has always been to be the best community college in the nation, and so we take those kind of lofty goals and run with it."

The President as People-Chooser

The presidents of the three colleges in this study all assumed an active role in hiring processes. The president who is aware of the importance of people to the college's success is the same one who wants to be involved in bringing new people on board. One respondent said that the college president was the last person in the interview cycle whenever anyone new was hired—and that could be anyone from a custodian to a vice president. More than a set of skills, that president was looking for a cultural fit. It didn't matter the experience or degrees a candidate might possess; if they weren't the best match for the culture, they weren't offered the job.

The President as Ambassador

Six interviewees indicated the importance of presidential visibility: "I see [the president] out just wandering [around campus], talking to students, engaging—like, all the students know who he is. He talks to them in the hallways, and he remembers who they are." Another added, "I think two, three, or four years ago, with the past president if I would have taken a survey of students and asked who was the president, many would say, 'I didn't know we had a president.' But I think now, we'd have a decently high percentage of people."

The interviewees shared personal stories about their interactions with the president or how they had witnessed a student's encounter with the president. They expressed a level of *comfort* in the presence of the president, instead of the more distant feelings they might experience in an environment that didn't recognize the importance of presidential accessibility.

According to the interviewees, the presidents in this study all made it a point to be visible. Their willingness to interact with students and staff created a sense of teamwork on campus and contributed to the college culture. One interviewee admitted that they "never thought" they'd be at that college for six years, but the president's invitation to hear proposals for new projects was something that made working there fulfilling.

The interviewees noted their respective presidents for their work in *organizational culture, motivating others*, and *student success*. As one stated, "Our president truly believes that student success is the most important thing we do. He has the passion. He says that we are going to do everything possible to help students be successful, and he preaches it every single time we get together."

Culture

Eleven interviewees indicated that culture plays an outsized role in the success or failure of any institutional initiative, reinforcing what was described in the literature review found in Chapter 2. When asked to describe their college's unique culture, participants responded with adjectives such as *supportive, sharing*, and *cooperative*. Eleven interviewees spoke positively of the local culture. No interviewee referred to their college's culture in a negative vein. One went so far as to say, "I would say that we have one of the best cultures that could probably be imagined in higher education."

Eleven participants noted the importance of creating and nurturing a positive culture. They reported that culture was woven into their hiring practices: "Many times when we hire a new advisor, it's their very first time in [the] higher education field, and so we mention to them that attitude and a cultural fit is important." Even if job applicants possessed high skill sets, they weren't considered for the position if they didn't seem like they'd fit the prevailing culture: "We're not going to go with any of [the candidates]. We're just going to start over." Those same attitudes are applied to student services. One college never launches any kind of "pilot" program that is designed to start small before unfolding campus-wide: "If it's good for one group of students, it's good for all students, and I think that has contributed to our success. That's impacted our culture." An interviewee at a different college held the same philosophy, that student support was linked to culture: "I'm amazed [by] how supportive and invested our counselors, faculty, and staff are in trying to make sure students are successful. Our culture is supportive, inclusive, and accepting." Another interviewee referred to the college's culture as "relational," implying that those relationships were shared between faculty and staff and between

advisors and students. Such relationships positively impact student success rates (Gordon-Starks, 2015).

A Culture of Engagement

One key to understanding how culture affected pre- and post-matriculation processes was *engagement*, a code that appeared in half of the 14 interviews. The interview participants reported feeling engaged by their campus community, and this in turn affected how they approached students while conducting outreach, onboarding, and advising.

I've worked at community colleges where everyone comes to campus, does their job, goes home. Students come to campus, take their classes, go home. And that's not [my current college]. Students live on campus, they work on campus, and they get engaged in activities, whether they are early-college high-school students or our traditional college students…I'm always seeing faculty and staff at athletic events. So engagement is huge in all different types of activities on campus.

When another interview participant was asked about engagement, they were quick to agree:

Used to be, we would have events, and people would come if they felt like it. [The college] would just close at 4:00 PM during the work week. Then our current president comes in and starts something called Coffee and Conversations every two weeks. We all come together, just to talk…we stay open later [in the day] for students. There's a lot of communication…and so it's just a very fun environment.

This level of engagement, made possible by open and frequent communication, plays an important role in promoting a healthy campus culture, reflecting the 2010 study by Kompaso and Sridevi that was discussed in Chapter 2, in which the authors showed that employee performance

was improved when they were engaged with fellow employees. The majority of the interviewees mentioned some level of interaction with campus events and/or with students that made those experiences feel reciprocal.

A Culture of Incentive

Nine interviewees noted that two of the colleges in this study offered rewards to employees for attending institutional events. One college incentivized *esprit de corps* with a formal points-based program. This is an employee reward system that tracks attendance and participation in campus events, from athletic contests to faculty lectures and everything in between. If an event is taking place, there is a point value applied to it. Employees use an app to check in at events and log participation details. Certain benchmarks earn the employee gift cards and other prizes. One interview described it like this:

> [It is a program] that faculty and staff can opt to participate in, and then by doing so it becomes part of your job. However, if you don't opt in, you do a portfolio instead. The college wants to see you participating in the community outside of college…so essentially you pick which level you want to participate in. You can be crazy and do everything and get what's called a "perfect score," or you can do minimal participation, and you can still get gift cards. There's incentives. It's for everyone. Even [the employees in] our physical plant participates in this.

In this case, the college encourages participation by making it competitive, building morale though a series of achievements that take the form of physical objects such as T-shirts and gift certificates. All employees of this college who were interviewed for this study confirmed that they had "bought into" the camaraderie and connections created by this program:

We've created the events to make what we call a culture of service. But I also think it's a culture of caring, of togetherness, and of unity, and we've set up all these types of events to make sure that we're going to come together. And then, as we come together, we look at what every different part of the college has going [on], we can't help but jump in because I know that I can help out.

As indicated in this study's literature review, employee enthusiasm plays an important role in student satisfaction (Allen, 2013; Bell, 2021; Fleener 2017). A considerable degree of enthusiasm was evident in the interviews when the incentive program was discussed. Incentivization is an indicated strong practice that strengthens the college's culture.

Leadership

Ten interviewees mentioned the importance of leadership in the success of pre- and post-matriculation processes. Leadership as discussed in the interviews was not confined to the president's office, but existed at various levels: a departmental director, a team leader, or an advocate for students.

One interviewee referred to leadership as the "secret sauce" that enabled their processes to move so efficiently. Another said that effective leadership helped to "move the needle" when it came to barriers, smoothing a student's path and making them feel "fully invested in their college." Yet another remarked that a leader within her department encouraged everyone to "just go full throttle" when it was time to roll out an event designed to engage students in the academic process.

One interviewee stated that leadership was perhaps even more important to overall student success than the work of those on the front lines, because "it's all about the structures that are in place and how students experience the college." Leadership makes those things

possible. The upper-level leaders have the most power to remove common barriers to student success by changing policies and procedures. The literature of inquiry and involvement, as detailed in Chapter 2, supports the data that were collected by this study.

Leadership as Inspiration

When speaking of their immediate supervisor, one interview respondent said, "He dreams probably the biggest that I've ever seen, and it's inspiring." When it comes to thinking about the "leader" of a college, the tendency might be to focus only on the president. The interviews, however, indicated that leadership was important all along the ladder of responsibility. In fact, those in a leadership role within a small office were reported to have an outsized effect on those in their immediate sphere of influence. The interviewees expressed a belief that their leaders encouraged them to use their position as a "springboard" to a promotion. The critical nature of leadership at these three colleges was expressed at all levels and seemed designed to inspire everyone to move into an even higher leadership position.

Leadership as Listening

Nine of 14 respondents talked about how they felt their voices were heard whenever they approached their supervisor. One said, "We have great leadership who listen to [our] voices regardless." They noted that they felt, on the whole, as if what they said about the "situation on the ground" was received by those with the power to make decisions. "It doesn't matter where you are" one said, "you can be certain that someone's going to listen." This willingness to listen is a key component for continuous quality improvement, as highlighted in Chapter 2.

Training

Ten of 14 individuals interviewed in this study mentioned the importance of proper training in the pre- and post-matriculation process, not only training in the specifics of the job

but also in customer service. One participant stressed the importance of training employees "to interact with students in a positive way and help them through the process." Several interviewees shared anecdotes of their own personal experiences as students, both positive and negative, when interacting with a college representative in the pre-matriculation phase of their academic career. Training appeared to have a major impact on the quality of those interactions.

Training Across Disciplines

Cross-training employees in any industry is intended to "strengthen teams, give employees more opportunities to advance, and create redundancies in case key team members leave" (Ginn, 2020, para. 3). In the case of higher education, the need for cross-training also has another benefit, which is reducing the number of offices a student must visit to complete the various tasks required to progress through the pre-matriculation process. Interviewees from all three colleges reported cross-training as a strong practice that helped to remove barriers to student success during the outreach, onboarding, and advising experience. This reinforces what was detailed within the literature review regarding the benefits of "de-jobbing."

"[We are] training each and every person on the front line to be able to everything," remarked one interviewee. "It's going to take time…but it can be done." Many workers in student support have access to identical screens of information, even if they aren't on the same campus, which is said to greatly facilitate communication. They are trained to understand the information they see, even if it is specific to a department other than their own. Training like this takes time and makes up a considerable portion of any new employee's initial development. But this training is enhanced by the one-stop shop concept, so that everyone is housed in the same location, working toward the same goal. One respondent stated that they support their cross-trained employees with the physical arrangement of their departmental desks, so that specialists

in financial aid, registration, and advising were separated by only a few feet. They constantly reinforced one another and built team morale.

Cross-training is continuous, as state and federal regulations are regularly updated. The interview participants indicated that the administration had set aside blocks of time each semester that were dedicated specifically to keeping all student support personnel current in strong practices. One interviewee remarked, "It feels like we're constantly training, even outside the institution." The participants spoke highly of how their college made efforts to provide training instead of just allowing employees to figure it out as they went along. Further, they seemed to appreciate the knowledge they had gained of multiple processes, feeling that it better equipped them for career advancement in the future.

Data

When asked about the use of data in support of particular interventions, 11 interviewees reported that, at least on some level, data were always consulted and used as evidence for decision-making. One interviewee provided an example:

> I sit on the Holistic Advising Committee, and it would be very easy to say, "Hey, I know this is being done somewhere else, we should try it, too." But every time something is proposed, the question has been, "What are the data?" "What is the drop rate?" "What is the pass rate?" And those conversations are had every time we make a decision.

Eleven interview participants believed that their processes were driven by an examination of existing information, with the ultimate result being an improved sense of accomplishment. As one interviewee attested, "That's the hope that we have, that every student has a little bit more of a plan wherever they are going. And that's something that I think came out of looking at our data." The majority believed their institution made decisions in pre- and post-matriculation

processes based mainly on data. A statement that was repeated in various ways was, "We think about our data, and we all look at our data quite frequently."

The literature review highlighted how new data on potential and existing students is generated almost constantly. Every second, the average person generates 1.7 MB of data (Domo, 2020). Because college-age students are likely to be highly connected to technology, that number is even higher for their demographic (Bray, 2020). The interviewees appeared to be very aware of the necessity of tapping into this ever-growing data pool of social media posts, trends, "likes", and check-ins. "We need to look at data," one replied. "We need to be informed."

Eleven interviewees agreed that their departments regularly consulted student outcome data and made decisions based on those numbers, rather than on feelings or fads. They were concerned not only with their college's overall completion rate, but also with the less obvious or more granular data sets, such as the number of dual-credit students interested in a particular major. One interviewee said, "We're seeing the data to see what our persistence will look like for this subset of students." The interview participants expressed a desire to understand the data that affected their immediate area and the students they served directly. One college endeavored to provide up-to-the-minute data to faculty members to improve lines of communication as a support structure for at-risk students:

> Every faculty member has numbers for success data [for students in their class]. Everyone's aware, from the chair to the faculty, of where [their numbers] are at. If there's improvement needed, it's not meant to be punitive. It's meant to be supportive…and then the students and the faculty are going to have more communication.

Half of the interviewees reported that they had seen data indicating that their pre- and post-matriculation practices were generating positive results. They understood through the data

that what they were doing to remove barriers to success was indeed having an impact on the students they served. One interviewee talked about how their innovations in onboarding dual-enrollment students dramatically increased their offerings to area high schools "from 15 classes in 2019, and then we went to 110 [classes] in 2022." Another discussed post-matriculation efforts focused on getting students through their first semester successfully. The data confirmed that the college's shift to accelerated eight-week courses was beneficial, and it was determined that "[students] do better in the compressed courses."

Data for Outreach and Enrollment

These data include improved relationships with area partners and increased enrollment. One interview participant who worked exclusively with dual-credit high schools remarked, "I'm, like, 'We need to know the data. We need to know how many students showed up [for our presentation]…and did it yield something like a registration.'" Interviewees talked about the importance of high-school students as part of the growing college population. High-school students add diversity to the campus and strengthen relationships with the community. All three colleges in this study provided services to area high schools. Because each of those schools is different, and because a service area can be quite large, the colleges depend on data to gain an understanding of the success of their outreach efforts. One interviewee detailed the importance of this practice in reaching growth targets:

> We know that dual-credit [enrollment] is the number that we look at every single time we pull data by zip codes, and we think about that. How many students do we have, and how do we get growth? How do we grow beyond that? And then on the first-time college student, we're always looking at that number, and we want to make sure that we're fighting to grow that number.

Once those students are on campus, the emphasis shifts from outreach to onboarding and advising, where data are equally important. One interviewee, who works in counseling and student advising, described how their department used data to change how their student services were structured. Their department was required to offer X number of "walk-in hours," when students could stop by and meet with an advisor without needing an appointment. The advisors collected the data on those hours and determined that students were much more likely to make use of their services during scheduled appointments—but during designated walk-in times, advisors were not allowed to schedule such appointments. After presenting the hard data to the administration, the advisors were given permission to reorganize their schedules so as to maximize student use. "[The administration] went with our data."

Data for Advisors

Interviewees at all three colleges reported putting emphases on the needs and outcomes of first-year students, based on data indicators. One interviewee, an advisor, said, "With that data we've also implemented what are called Life Coaches…to assist in anything connected to resources," such as a food pantry, a social worker, or resources for veterans. All three colleges offered some type of resource center for basic needs insecurities (BNI), and they reported frequently consulting data to see how often these services were used by the student body.

If data indicated that something wasn't working efficiently, changes were made. One interviewee detailed a substantial structural change that was made due to data, in which authority over the advising department was transferred from student services to the academic side:

> Our persistence data was falling behind the state. And so we took a look at our practices
> and determined if there was a way we could strengthen advising so that we may impact
> persistence. And we made the decision…to transition Advising under Instruction, hoping

the lines of communication about the challenges students were experiencing in the classroom would address persistence.

One-stop shop

The literature review highlighted the importance of integrated support services. Directly related to that strong practice, eight interviewees used the term "one-stop shop" without prompting. They used that identical phrase when asked to describe what they believed to be a strong practice at their institution in the area of pre- and post-matriculation. One explained in detail how it worked at their college:

> We're all integrated. We're all right here together, like even physically, logistically …we're all in the same building. So, all of our offices and stuff are all in this one large space, so when students can come in, they're greeted by a success advocate. And they say, "What are you here for, financial aid?" [The students] can just walk up to the podium and talk to financial aid right away. The Career Development Center is right here. Our testing services for placement stuff is on the floor just directly above us. Years ago, before I even came, all of these services are scattered all over, and they recognize the need to be a one-stop shop. The cool thing is the bottom floor. There's the bookstore, the business office, all in the same building. But there's also a big open area. There's a little coffee shop. There's study rooms. And then up on the third floor above us is the testing services. All the success advocates are also right up on the third floor above us. Registration is here in this area with us. So when a student meets with me we go through their degree plan. I help them put their schedule together. I walk them straight down fifty steps to registration. Make sure you get enrolled and registered. Get their schedule, walk them over to financial aid right outside my office. Talk to them. They'll get you

straightened out. What you need to do if they need to talk to the business office. Go right down below us downstairs. So, it has centralized the access.

Another interviewee, who worked in student outreach, said the one-stop shop applies not only to a building on the main campus, but to all student registration experiences: "We try to truly be embedded wherever our students are, as much as we possibly can, so that we can walk them through the process. [We are] basically creating one-stop shops in our events but creating one-stop shops in all of these communities, too."

The idea carries over into other parts of the process. Interviewees from one college reported that their institution is trying to do away with hardcopy forms entirely. "We've created only dynamic forms for everything, so if a student needs to fill something out, I can just email them the link…and then it gets submitted directly back to me."

Each college had either entirely consolidated all student services into a single location on campus, or they were working on bringing the last few elements of that process together. The end goal is that a student can walk in off the street and leave that building with a class schedule, having finished placement tests, completed the FAFSA, and taken advantage of all student support services in one visit.

Empowerment

A successful pre- and post-matriculation program appears to depend in part on whether or not employees feel empowered to do their jobs autonomously. Lau (2010) examined how non-faculty members in higher education perceived the college's support of them as individuals and how this perception led to a sense of empowerment that in turn affected the quality of their work. None of the 14 individuals in this study were full-time faculty, though one interviewee did teach in an adjunct capacity. Half of the interviewees reported that college leadership fully supported

efforts to think outside the box and try something new. One said, "[My supervisor] encourages me to dream big. Sometimes we don't know how we're going to pull off some of these events…but he makes us believe." A student support administrators explained the link between empowerment and innovation:

> We want to be the most innovative place, and we're asked [by college leadership] to innovate. We're given the space to innovate, which I love, and to be creative. And then we're asked to be accountable for it…they'll ask questions like, "Are we making it happen?" "Did it happen?" "Was it successful? Let's sit down and debrief."

> Other interview participants had similar experiences when asked if they felt empowered to try new things in the areas of pre- and post-matriculation student success: "We set aside dollars for innovative projects. Because I mean it truly is our spirit. We want to be entrepreneurial. Don't let budget be your barrier…you can go and create that idea you just had."

Empowering Employees

Encouragement leads to an eagerness by employees to try new ways of supporting and retaining students. One unique example was an interviewee who proposed to the upper administration that she and her staff be allowed to start a community garden on campus to support the efforts of the college's basic needs pantry:

> I am a gardener and took the idea to [the college president] because in our food pantry, we couldn't always get fresh produce, and students really wanted that, especially some of our international students who don't eat canned food. And so I said, "Hey, let's do this." And they funded it.

Another interviewee noted a frequent barrier to a smooth registration experience was the required parental signature; it was difficult, time-consuming, and sometimes impossible to obtain a parent's signature when dual-credit advisors were working on-site at area high schools:

I asked if we could take out the parent signature and just have the students sign a DocuSign form, and have the high school counselors sign, because with our demographics, sometimes the dual-enrollment part where the parents sign is lost because the family doesn't have internet access. They don't have a computer. This was a stumbling block, since the counselor already had the authority to put the student in the class. So once we took that requirement out, the process was 150% better. We're very lucky that we can bring it to our leadership and say, "Can we have a change?"

These self-driven initiatives were not funded by pre-existing budget processes and were not always implemented because of available data—for example, insufficient data existed regarding campus gardens—but the interviewees reported a healthy system that allowed for innovation. One remarked, "There are processes and procedures that you go through, but you definitely have a lot of opportunity to kind of make your area the best it can be." These are examples of ways in which funding and data exist parallel to innovation but do not necessarily dictate its path.

With only one exception, the interviewees reported that they felt as if their personal and professional goals lined up with the college's goals. At times their enthusiasm seemed almost evangelical, with one respondent saying, "It's almost like [the college] grabs me by the hand, and they never let me go…and so now I'm an advocate." A supervisor addressed their role in supporting their employees' aspirations: "I'm, like, we're going to get you that next promotion.

We're going to work hard. I love what we're doing here, and this is an incredible training ground."

Twelve of 14 interviewees interacted with students on a daily basis. They reported that they were given latitude in how they supported those students, whether that meant adjusting office hours, conducting advising sessions remotely, or even venturing out into the community to bring the advising to the students instead of requiring the students to initiate the connection. As White (2020) pointed out, "The value of an institution having a vibrant academic advising program, able to pivot quickly when the circumstances demand, cannot be underestimated" (para. 23). One professional advisor described how those in his position were allowed to select any conference or event they'd like to attend each year, as long as it related to improved student advising and satisfaction, and the college paid for their attendance, trusting that they'd return to campus with exciting new ideas for pre- and post-matriculation student success: "There's a lot of support, both in terms of philosophically but also financially, for professional development and our [personal] goals."

Empowering Student Success

This sense of empowerment and innovation directly impacts a student during the initial phase of their academic journey. The students become the ultimate beneficiaries. One example was given by an interviewee in the advisor's office, who described how someone's idea led to a simple but impactful change in their office alignment:

> We flipped our advising center from being a traditional desk…the students over there, and [the advisor] on the other side, to more of like a conference table with chairs around it, so that we're together, not separated. They installed large TV monitors on the walls so that the student could see the screen and be part of the process, versus, "I'm over here

putting you in classes, but you can't see." That's just one example of something that came through innovation.

Another college relied on individual empowerment when they introduced Life Coaches who supplemented the work of the advisors, helping students overcome off-campus barriers before the first day of class. The Life Coach idea wasn't a top-down initiative but was proposed by an advisor who saw an opportunity to help students in the pre-matriculation journey and was given permission to pursue it, to the benefit of the student and the college.

Emerging Themes

Themes reside in what Mishra and Dey called the "heart" (pg. 187) of qualitative research, though themes cannot be directly observed. Instead, themes are derived from the research respondents' experiences, perceptions, and observations. The exact definition of a theme varies (Bazeley, 2009; Kiger & Varpio, 2020), but generally speaking, themes are "abstract and subtle expressions/processes that explain a phenomenon" (Mishra & Dey, 2022, p. 188).

After an analysis of the interview transcripts and a consideration of overlapping codes, the researcher identified several important themes. The criteria for focusing on these particular themes were both objective—how frequently these ideas were mentioned—and subjective—the degree to which the interviewees expressed their belief in these ideas with a passion for their work. These themes indicate strong practices, which in turn assist in answering the research questions. Table 7 summarizes the relationship between the themes, the codes, and the appropriate lens from Bolman and Deal's Four Frames of Understanding Organizations.

Table 7: Themes, Codes, Weights, and Frames			
Theme	**Code**	**Weight**	**Frame(s)**
Select the right president	presidency	11	Human, Symbolic
Engage and incentivize to create enthusiasm	culture	11	Symbolic, Human

Table 7: Themes, Codes, Weights, and Frames			
Theme	Code	Weight	Frame(s)
Lead at all levels by listening	leadership	10	Human
Cross-train employees	training	10	Human, Structural
Use data to improve services	data	8	Political, Structural
Streamline the process	one-stop shop	8	Structural
Encourage innovation	empowerment	7	Political, Human

Theme: Select the Right President

The "right" president is one who creates the type of energy and enthusiasm discussed by the participants in this study. Perhaps even more important than the president's experience or knowledge base is their ability to inspire, to maintain open lines of communication, and to serve as a visionary for others to follow.

The presidency touches on both the human and the symbolic frames. Presidential impact on employee morale, motivation, and empowerment directly impacts the human element of the organization. At the same time, the president's role in determining culture, in preserving tradition, and in endorsing the institution's values underscore the importance of the symbolic frame.

Theme: Engage and Incentivize to Create Enthusiasm

A cultural trait the researcher observed was enthusiasm. Those who responded to the request to be interviewed tended to express a certain level of excitement for their work. With only one exception, the interviewees appeared to be sincerely eager to see students succeed and to use the resources allotted to them to be creative in their response to student needs. As many as 13 interviewees talked about a passion for their work and a joy at seeing students overcome barriers.

Engagement and enthusiasm are expressions of the human and symbolic frames. They depend on people and the environment in which those people work. When the cultural norms encourage innovation, the bond between the college and its employees is strengthened.

Theme: Lead at All Levels by Listening

Group leaders, departmental directors, deans, and upper-level administrators can all engender a more creative and productive workspace by actively listening to the ideas of those in their area of responsibility. This is more than simply announcing a "my door is always open" policy; it means actively seeking out the counsel of staff members and encouraging them to bring forward their own ideas for change.

Leadership is best viewed through the human frame, as it depends upon the quality of the relationship between the leader and their staff. The nature of that relationship impacts the organization's output.

Theme: Cross-Train Employees

Students receive a better experience and barriers to success are removed if support staff and advisors are trained to answer questions that are normally outside their job descriptions. Colleges with successful pre- and post-matriculation processes are those who involve their staff in continuous training and provide a proactive support network.

Cross-training involves people and processes, so it is best viewed through the human and structural frames. The realigning of professional development to provide cross-training involves structural changes as employees are taught to be multi-disciplinary in their interactions with students.

Theme: Use Data to Improve Services

By routinely consulting data and assessing the performance of processes and programs, the college can better consider student needs and provide a more satisfactory customer experience. Successful initiatives begin with data. The evolution of those initiatives depends on frequent assessment of results.

The dependence on objective data intersects both the structural and political frames. Policies and procedures are organized or structured around an analysis of the data, and the agendas of alliances within the college are supported—or undermined—by that analysis.

Theme: Streamline the Process

Streamlining encompasses both the introduction of a one-stop shop and the shift from hardcopy paperwork to digitally signed forms. This usually involves a physical rearrangement of offices so that students can complete all pre-matriculation requirements in a single place.

The organizing of offices as a one-stop shop model falls squarely within the structural frame. If something is physically realigned for efficiency, it alters the organization's structure.

Theme: Encourage Innovation

Employees who deal with students on a regular basis, when given the freedom and funding to innovate, have the opportunity to make an immediate impact on the people they serve. Their desire to innovate stems from their enthusiasm for their jobs.

This is best viewed through the political and human frames. Political cliques or alliances are comprised of people who are motivated by their own personal aspirations. A sense of freedom and enthusiasm will influence each employee's professional journey.

Themes, Strong Practices, and Research Questions

The seven themes above are actions and initiatives that study colleges have taken to improve pre- and post-matriculation student experiences and to positively impact institutional culture. They can be linked to the research questions. In that manner, all themes are strong practices.

Question 1: Which strong pre- and post-matriculation practices do study colleges perceive they have implemented?

Analysis of the data indicate several practices that the study colleges considered to be strong practices:

1. The colleges believe that cross-training is fundamental to their success and necessary in order to provide students with the best experience possible.

2. The colleges believe that their constant use of data ensures them strong results during outreach, an efficient student onboarding process, and a personalized advising model that keeps students moving toward a certificate or degree.

3. The colleges believe that by creating a one-stop shop model to house all student-related services, they are making students' paths easier to navigate.

Question 2: What strong practices do study colleges have in common?

The research identified strong practices held in common by thee three colleges:

1. *Hire the right president*. The college president set the tone for the institution's culture, created an environment that invited communication, and inspired college employees to dream big.

2. *Depend on data*. The college used data as the engine to drive all decisions, planning processes, and assessment efforts.

3. *Consolidate student services*. The college consolidated all offices of the pre- and
    post-matriculation processes into a single campus building, cross-trained employees,
    and streamlined paperwork as much as possible.

Question 3: What is the relationship between institutional culture and pre- and post-matriculation interventions and systems?

This research strongly indicates that culture plays a prominent role in not only the integration but also the ultimate success of pre- and post-matriculation processes. Factors influencing culture include the president, a mid-level leadership that is willing to listen and act, and employees who feel a sense of empowerment to create new opportunities for themselves and for their students. An integrated pre- and post-matriculation system depends heavily on cooperation and communication, and those two components will not flourish in a culture that does not value and nurture them.

Chapter Summary

This chapter provided an overview of how the study's data were analyzed and how the resulting patterns identified in the data led to the identification of themes or strong practices. After setting the interview questions within the context of Bolman and Deal's Four Frames of Understanding Organizations, the chapter explained how MAXQDA was used to facilitate the identification of patterns and codes within the interview data. An analysis of the fourteen interviews comprised the bulk of the chapter, with emphasis given to those codes that featured most prominently in the data. That analysis was extrapolated into themes, or strong practices, which respond to the three research questions. These results provide insight into the institutional culture and its impact on policy and people, as well as the processes, actions, and goals of student success.

Chapter 5 will summarize the study's findings. It will also present the implications of this study for practice and further research into pre- and post-matriculation practices. The chapter concludes with a brief summary of the entire study.

Chapter 5 – Conclusions and Recommendations

A review of the research begins this chapter, including a recap of the study's purpose, research questions, and guiding theoretical framework. A summary of the study's findings are then presented within the context of the conceptual framework of systems thinking, followed by implications and concluding remarks.

Research Overview

Each academic year, many students who apply to a community college do not end up attending class, and of those who do, a significant number do not persist through their second semester. Too many obstacles block their path, and they are not all equipped to overcome these barriers. Community colleges periodically employ new initiatives to address individual pieces of these pre- and post-matriculation periods of a student's academic journey, but the literature lacks a description of these initiatives as they relate to one another as a complete system. The purpose of this study was to describe the characteristics of pre- and post-matriculation efforts that internal stakeholders believe to consist of strong practices to improve the student experience. The study also sought to understand whether or not the participating colleges had integrated those practices into a single system. The researcher explored the culture of those institutions to determine the effect of culture on the success of pre- and post-matriculation processes to answer three research questions:

Question 1: Which strong pre- and post-matriculation practices do study colleges perceive they have implemented?

Question 2: What strong practices do study colleges have in common?

Question 3: What is the relationship between institutional culture and pre- and post-matriculation interventions and systems?

The researcher analyzed the study's data using Bolman and Deal's Four Frames of Understanding Organizations (2013) as a lens. Each frame allowed the researcher a slightly different perspective on the events and operations described by the interviewees. Systems thinking informed the researcher's approach as a conceptual framework and assisted in drawing meaning from the emerging themes. The application of systems thinking to this study's research data can be found in the Findings below.

This study was a qualitative research project that employed semi-structured interviews of 14 participants to extract data that were used to describe the pre- and post-matriculation processes at three community colleges. This method helped the researcher identify patterns within the data, which in turn brought to light several prevailing themes.

The colleges were selected from a reputational sample, based on their referral by a panel of experts in the areas of student outreach, onboarding, and advising—the main elements of the pre- and post-matriculation experience. The 14 individual interview participants were a broad representation of individuals who worked in pre- and post-matriculation areas of each college, from front-line admissions staff to advisors to vice presidents. The researcher used patterns within the interview data to identify common themes or strong practices that responded to the research questions.

Summary of Findings

This study identified strong practices that impacted student success. The data indicated that the study colleges, though perhaps different, employed a similar set of those strong practices that resulted in pre- and post-matriculation success. Though not all of the practices explored in the literature review of Chapter 2 were cited by the interviewees in this study—for example, the use of accessible language and first-year seminars—many of the practices were in use by the

participant colleges. These findings reflect the heuristic nature of qualitative research. The institutions in this study appear to understand that simply putting students on a path to a degree plan is not enough. As Wyner (2019) noted when analyzing the success of 10 Aspen Prize finalists, "These colleges understand that students will fall off even the most well-designed pathways if they don't have a range of supports" (para. 7). The strong practices identified as themes in this study represent that support structure. The analysis of those strong practices led to several findings, discussed below.

Leadership Shapes Employee Morale

Employees respond positively when they feel as if the college makes efforts to involve them and to invite their participation. They buy into the programs, and this buy-in creates a culture of solidarity. Further reinforcing morale, employee incentive programs offer tangible benefits for being active in campus events. This can translate into higher job satisfaction, which is reflected in the way employees interact with students.

Employees feel empowered when they have the sense that their supervisor is not only soliciting their input but encouraging them to think outside the box when it comes to student success. The way to ensure buy-in is to inspire a sense of camaraderie, and that is much more easily accomplished in an environment where everyone believes that their opinion matters, no matter their pay grade. This creates a culture of communication, cooperation, and equity.

People within cliques or alliances may be seen as contrarians by people outside those cliques. But when new ideas are brought forward, their proponents can be made to feel included and important when given the freedom to explore their own concepts for improving the student experience. This study found that the green light to innovate isn't only for those who share the

college president's philosophy but even for those with disparate views, assuming they all share in common the goal of student success.

An employee who has been given clearance to think creatively, instead of being confined to rigid job parameters, is one who is more inclined to feel a sense of ownership in their workday routine. Administrators who treat their staff as self-motivated innovators ascribe to Theory Y of Douglas McGregor's theory of work motivation (1960), which sees employees as responsible contributors who seek out challenges and strive for vocational excellence. This is in contrast to Theory X, which believes unsupervised employees will do only the required work, and only to earn a paycheck. When student support specialists feel as if the college "has their back," they are more inclined to try new things. Further, hiring new employees is not always about finding people with the proper skills and background but instead about finding people with a spirit that matches the prevailing culture. Job experience is less valuable when it comes to promoting student success; of greater value is heart.

The college president has a direct impact on employee morale. As the president sets the tone for campus dialogue, it is important that they display a willingness to listen and an honest desire to see their faculty and staff thrive. People are far more willing to go the extra mile for students if they witness the president doing the same.

The *AACC Competencies for Community College Leaders* emphasizes the need for a community college CEO to appreciate "the significance of the institution's past while charting a path for its future" (American Association of Community Colleges, 2018, p. 79). The president embraces the college's history while working with all campus stakeholders to achieve its mission and to better serve its students. The president is the symbol of the college, a reflection of its goals.

When viewed through the Four Frames of Understanding Organizations, the role of the president impacts three aspects of the college's composition: the human, the symbolic, and the political. It encompasses employee motivation, institutional culture, and customer service. As such, it represents a prominent influence on the student experience.

Data Support Structural Changes

Decisions should be made not because of political influence, popular trends, or conference fads. Data should inform decisions and guide the creation of any new endeavor. In today's world, where information is created by the second and readily available, there is no excuse for ignoring data. Processes built on data and visible evidence will produce results. All phases of the outreach, onboarding, and advising experience should be organized around existing data, with target numbers for improvement formed by examining anticipated trajectories.

The data analyzed in this study indicate that by housing student functions in a single building, and by reducing the inevitable slow-down caused by the handling of physical paperwork, the college develops a higher-functioning system. This streamlining requires a change in published operating procedures, a reconfiguration of physical assets, and an investment in document-processing software. The results are a more complete and more transparent student path from application to the first day of class and beyond. As was discussed in Chapter 2, there are four levels of data use in higher education (Microsoft, 2021). Most of the interviewees described their institutions in ways that placed them in the second level of data use, a *system of engagement*, which links data to tangible actions. The next level is the *system of influence*, in which colleges begin to predict future patterns. The final level is the *system of intelligence,* in which all actions become automated.

Another important structural change is cross-training employees. Providing strong customer service is an important part of all aspects of the outreach, onboarding, and advising journey. Cross-training depends on the college building the mechanism needed to provide for that type of multi-faceted education. Professional development hours could be dedicated to cross-training, and funds directed at promoting and supporting the training sessions. Physical spaces can be organized to create an environment where cross-training happens as a matter of course as employees from different offices work together throughout the day. Cross-training simply makes things better—for the college, for the student services team, and for the student.

This finding touches upon the structural and political lenses of the Four Frames of Understanding Organizations. This study indicates that successful colleges have redesigned professional development and reorganized physical spaces in response to data. Published policies and procedures have been rewritten at those colleges to improve the student experience.

High-Performing Colleges Create Systems

The colleges in this study have created systems of pre- and post-matriculation services. According to systems thinking, because the phases of the pre- and post-matriculation experience at these colleges are dependent on one another as part of a single process with a shared goal, they are indeed a system and should be examined for how they perform as a combined entity. By focusing intentionally on streamlining operations, cross-training employees, and consolidating offices into a single space, the colleges have built systems specifically designed to dismantle traditional barriers and to guide students into the second semester. The data indicate that these systems have achieved success in removing common obstacles along the student journey. The colleges regularly refer to these outcome data when refining their systems. The systems are supported by a cultural infrastructure built on high morale and employee buy-in. The tone of this

culture is set by a proactive college leadership, specifically the president, who is a visible, approachable presence on campus. Given this, the systems at these colleges meet all four of Kim's (1999) defining characteristics of a system, as described in Chapter 2: the system has a shared purpose; all parts must be present for the system to function; the order in which the parts are arranged affects the system's output; and the system is stabilized through continuous assessment of success data.

Cuofano (2022) defined systems thinking as "holistic means of investigating the factors and interactions that could contribute to a potential outcome" (para. 1). The three colleges in this study understood the best potential outcomes to be increased student satisfaction and improved success rates in the outreach, onboarding, and advising processes. When viewed holistically in the context of the responses given in the 14 interviews, the colleges have concentrated efforts in these areas and have indeed created working systems. Though the interviewees did not refer to their efforts as a "pre- and post-matriculation system," they did express a belief that their college considered the student support service during these timeframes to be homogenous instead of a series of disconnected processes. The interviewees saw that part of the student journey as a whole experience, rather than as individual pieces.

Implications

The findings imply a hierarchy of factors that contribute to successful pre- and post-matriculation systems. The most important element is the community college president. The president's office establishes a baseline for behavior. The college's initiatives, public perception, internal motivations, and employee satisfaction begin with the presidency and move outward from there. The findings suggest strongly that the college president is the most potent actor in the systems these colleges have created.

Second in importance is the culture that president helps create. Culture depends on employee morale and enthusiasm—things that can be encouraged and incentivized. Culture can at times be almost palpable, and it serves as a metric when hiring new staff members. A positive and robust culture allows teamwork to thrive, and teamwork is necessary to the maintenance of the streamlined pre- and post-matriculation systems described in this study. Leadership at all levels of college's pre- and post-matriculation efforts also contributes heavily. The leaders described in this research were more than just willing to listen to new ideas; they actively encouraged their staff to generate those ideas and to grow as professionals. It is not enough to have the right president. The institution must install that same kind of leadership at all levels. Grassroots initiatives started by front-line staff are valued equally to initiatives introduced from the top.

The findings imply that constant training is necessary to keep the pre- and post-matriculation systems operational. Specifically, employees must be cross-trained in a variety of student-related functions so as to provide a complete experience for the student. Professional development sessions can be redesigned to keep staff members current on information and skills needed in several stages of the student journey. Anyone on the front lines of student support should be able to meet a student's needs, answer their questions, or connect them with an appropriate service.

Data underpins the pre- and post-matriculation systems described in this study. The participants in this research confirmed that they consulted data during all phases of any particular initiative. This implies that an awareness of data and a willingness to adapt based on those data are necessary elements when designing and maintaining a high-functioning system. For a

program to be justified and sustainable, it must be routinely assessed and modified as new information warrants.

From the moment a student submits a college application to the day they set foot in the classroom, they interface with multiple offices, departments, and service-providers. These can all be housed in a centralized location. The findings of this research imply that this kind of physical consolidation is integral to the process; in fact, it helps transform that process into a complete system. If any college wishes to do one thing to immediately improve outcomes in customer service, it should consider adopting the one-stop shop model.

Finally, students are the ultimate beneficiaries when college employees feel empowered to conduct their assignments autonomously. Staff on the front lines of successful pre- and post-matriculation systems are not micromanaged. The opposite seems to be true. They are encouraged to innovate, to be creative, and to discover new ways to do their jobs more efficiently or to offer students a more complete college experience.

Implications for Practice

The findings of this study imply the hiring the right president is the most important factor in establishing culture and in the success of pre- and post-matriculation systems. The *AACC Competencies for Community College Leaders* discusses the traits of successful college CEOs (American Association of Community Colleges, 2018). Several of the traits mentioned by the interviewees in this study are found within those competencies, namely *organizational culture, motivating others*, and *student success*. The published competencies can provide a valuable resource for colleges involved in the search for the proper presidential fit. Other markers can be found through the Aspen Institute, which asserts that "the skills and qualities that made community college presidents effective when the dominant benchmark of success was access

alone are no longer the same now that expectations extend to higher levels of completion, quality, and productivity" (Aspen Institute, 2013). The Institute has released an open-source guide titled *Hiring Exceptional Community College Presidents: Tools for Hiring Leaders Who Advance Student Access and Success* (2014). The guide contains practical instruments such as rubrics for evaluating candidates, interview questions, and protocols to align student needs with hiring criteria.

In addition to documenting the importance of the presidency, this study's description of high-functioning pre- and post-matriculation systems can provide insight for colleges wishing to improve their performance in in these areas. The research examined strong practices that have been indicated to reduce barriers to student success in the pre- and post-matriculation phases of the student experience and placed those practices within the context of a college's culture. Colleges can move away from focusing on individual components of the pre- and post-matriculation timeframe and instead move toward adopting a cooperative and unified system.

Colleges applying system thinking will want to understand the roots and interconnectedness of pre- and post-matriculation processes and how, together, they can contribute to the success of its students. Outreach is the process of promoting the college to prospective students and engaging with the community. Onboarding is the process of welcoming new students and helping them navigate the college experience. Advising is the process of providing academic guidance and support to students to help them achieve their educational goals. One way to apply systems thinking to these processes is to view them as part of a larger system that includes the college's curriculum, faculty, staff, resources, and students. In such a system, each process is interdependent and impacts the success of the others.

For example, a strong outreach program can attract a diverse and talented pool of students, but if the onboarding and advising processes are inadequate, students may struggle to navigate the college experience and achieve their goals. Conversely, effective onboarding and advising processes can help students succeed, but if outreach is weak, the college may not attract enough students to sustain its programs.

To address these interconnected processes, a college could apply systems thinking by considering steps that can promote a successful implementation:

Identifying the key stakeholders and their needs: Stakeholders include prospective students, current students, faculty, staff, and the community. By understanding the needs and expectations of each stakeholder, the college can design outreach, onboarding, and advising processes appropriate to their needs and that contribute to their success.

Mapping the processes and their interdependencies: The college could map the pre- and post-matriculation processes to understand how they are interconnected and how they contribute to the success of the college and its students. This could help the college identify areas of strength and weakness and prioritize areas for improvement.

Identifying feedback loops: Feedback loops are important to systems thinking because they help organizations adjust their processes based on feedback from stakeholders. In this case, the college could establish assessment mechanisms to gather input from students, faculty, staff, and the community about the effectiveness of its initiative. The college can then use this feedback to improve its system.

Engaging in continuous improvement: Systems thinking emphasizes the importance of continuous quality improvement, a strong practice that was discussed in Chapter 2. The college can use data analytics to monitor the effectiveness of its pre- and post-matriculation system and

adjust it as needed to improve student outcomes. By applying systems thinking to its outreach, onboarding, and advising processes, a college can improve student success and contribute to the overall success of a pre- and post-matriculation system.

The systems described in this study can be replicated. Though the cultural element is important and cannot be created without like-minded leadership in place, the basic framework of a pre- and post-matriculation system might be implemented across community colleges. As described by the participants in this study, the basic building blocks are the one-stop shop, cross-trained employees, and digitally signed forms. Assembling these pieces begins to create an innovative system that stands in opposition to the classic, disconnected services found in separated offices, siloed employees, and hardcopy paperwork. The manner in which the interview participants described their daily operations implies that those systems could happen anywhere. Yet at the same time, this remains an exploratory study designed to identify perceived strong practices among individuals engaged in student success work at specific colleges, so institutions must consider their own context if and when they decide to implement one or more of these practices.

Implications for Further Research

This study used data from employees at community colleges that were selected based on their reputations for using strong practices in the pre- and post-matriculation phases of the student journey. Subsequent research drawing data from a larger, random sampling of colleges could provide valuable insight into these practices at institutions not pre-identified as excelling in this area. Additionally, the student perspective was not examined directly during this study. Conducting interviews among students who are facing the challenges of the pre- and post-matriculation process could extend and perhaps refine these findings.

Chapter Summary

President Harry Truman never earned a college degree. Yet his commission's 1947 report, "Higher Education for American Democracy," has been responsible for altering the lives of countless college graduates in the decades since. The community college, a uniquely American institution, opens its doors to all learners—yet that openness brings its own set of challenges. Many students walking through that door won't complete the journey without assistance. Too many barriers stand in their way. This study described some of the most effective ways that high-achieving colleges are removing those barriers. Further, this study highlighted the items seen as most important to day-to-day success in the eyes of the people on the front lines of student service. It uncovered real-world examples of the qualities necessary for building an institution with a people-based culture that is focused on giving students a linear path to graduation. These intangibles are not apparent when perusing a college's website or reading its strategic plan; they are discovered only when using a consistent protocol to pose direct and purposeful questions to the individuals charged with the work and embedded within the culture, those with the enthusiasm and creativity to make the process work from the inside. This study provided the interviewees with a platform to describe in detail the inner workings of systems that were intentionally manufactured to support students and that are refined by data in response to evolving student needs. This research found that successful community colleges have implemented strong pre- and post-matriculation practices: they select the right president; they engage and incentivize to create enthusiasm; they promote leadership that listens; they cross-train employees; they use data to improve services; they streamline processes; and they encourage innovation. These practices create a culture in which a pre- and post-matriculation system thrives.

The dedication to service described in this study begins with a willingness to change. Compelled by evidence in the literature and trends in local data, community colleges can make the decision to transform themselves. The participants in this study provided testimonials to how those processes can be interlocked, services rendered more efficient, and barriers to student success removed.

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Appendices

Appendix A: Invitation Email and Interview Questions

Invitation Email

Greetings, colleague!

My name is Lance Hawvermale. I am a doctoral candidate at Kansas State University's Community College Leadership Program. I'm conducting a dissertation study that seeks to document strong practices during students' pre- and post-matriculation experiences in place at [college name]. You have been identified by your college's leadership as someone who can provide valuable insight in this area. I am asking you to consider participating in a brief interview.

The Internal Review Board at [college name] overseeing human subject research has given me permission to contact you directly. This proposed Zoom interview will focus on your knowledge of your institution's student services processes, specifically the outreach, onboarding, and advising experience. The session will consist of approximately a dozen questions and take no more than one hour of your time. We will schedule this interview at a day and time that matches your busy calendar.

Your participation is totally voluntary. Your name will not be included in the study and all responses will be anonymous. You may elect to opt out at any time prior to or during the interview.

To accept or to decline this request, please reply to this email or call me directly at [phone number]. I hope you will consider this effort to inform strong practices in this critical area for the benefit of the work we do as community college educators. Thank you so much for your consideration.

Interview Questions

1. Please describe your role here at the college. How long have you been in this position at this institution?

Structural Frame (RQ 1 and RQ 2)
2. From the moment a student applies to your college until that first day of class, what is their journey like? How do they get from the application to the classroom?
3. What strong practices has your institution deployed to improve student outcomes, and of those practices, which do you believe has been the most successful?
4. What specific goals, if any, has your institution set in these areas? Have these goals been met?

Symbolic Frame (RQ 3)
5. How would you describe your college's culture?
6. What are the factors that contribute to that culture?
7. Has your college's culture changed? If so, how?

Human Frame (RQ 3)
8. What role does the college leadership play in student success?
9. How does your institution strive to empower its employees as individuals? If it does, what are examples? If employees are not empowered, why not?
10. How are your professional goals are aligned with the institution's goals? If so, how? If not, why?

Political Frame (RQ 1)
11. How would you characterize the voice that personnel in your immediate area have in the decisions the college makes?
12. In your perspective, how are decisions about implementing and improving strong practices based on data and evidence made??
13. Describe the cliques or groups exist at this college, if any. How do those alliances affect the college in positive or negative ways?

14. Please describe pre- and post-matriculation processes at your college. What is the level of integration between departments? What practices assist with cooperation or inhibit cooperation between the different offices involved in those processes?

Appendix B: Alignment of Research and Interview Questions

Quality research studies exhibit alignment in conception and method, demonstrating a parallel path for all components of the project (Price 2016). The table below illustrates how the research questions are designed to be answered by specific interview questions, which have been composed through the lens of Bolman and Deal's four frames.

RQs	Interview Questions	Bolman & Deal	Framework Assumptions
Alignment Table			
RQ 1 and RQ2	2-4	Structural Frame	Procedures are defined to generate results.
RQ3	5-7	Symbolic Frame	Success is created by understanding anchored beliefs.
RQ3	8-10	Human Frame	Success happens when people's needs align with the institution's goals.
RQ1	11-13	Political Frame	Alliances create strength and produce results.

Appendix C: Expert Selection Panel

Terry Calaway, Ed.D., President Emeritus, Johnson County Community College and Central Arizona College

Karla Fisher, Ph.D., Chancellor Emeritus at Arkansas State University-Beebe, and former interim president at Butler County Community College

Allen Goben, Ed.D., President Emeritus at Tarrant County College Northeast, Heartland Community College, and Hazard Community and Technical College

Appendix D: Internal Review Board Approval Statements

K-State IRB Approval Statement

KANSAS STATE UNIVERSITY | University Research Compliance Office

TO: Richard Voorhees
Proposal Number: IRB-11402
Educational Leadership

FROM: Lisa Rubin, Chair
    Committee on Research Involving Human Subjects
DATE: 11/08/2022

RE: Proposal Entitled, "Pre- and post-matriculation student success practices in community
      colleges: A survey of strong and integrated practices."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for
Kansas State University has reviewed the proposal identified above and has determined that it is
EXEMPT from further IRB review. This exemption applies only to the proposal - as written –
and currently on file with the IRB. Any change potentially affecting human subjects must be
approved by the IRB prior to implementation and may disqualify the proposal from exemption.
Based upon information provided to the IRB, this activity is exempt under the criteria set forth in
the Federal Policy for the Protection of Human Subjects, **45 CFR §104(d), category:Exempt
Category 2 Subsection ii.**
Certain research is exempt from the requirements of HHS/OHRP regulations. A determination
that research is exempt does not imply that investigators have no ethical responsibilities to
subjects in such research; it means only that the regulatory requirements related to IRB review,
informed consent, and assurance of compliance do not apply to the research.
Any unanticipated problems involving risk to subjects or to others must be reported immediately
to the Chair of the Committee on Research Involving Human Subjects, the University Research
Compliance Office, and if the subjects are KSU students, to the Director of the Student Health
Center.

Electronically signed by Phill Vardiman on 11/09/2022 11:24 AM ET
On Behalf of IRB Chair

Appendix E: Informed Consent Form

KANSAS STATE
U N I V E R S I T Y

University Research
Compliance Office

Institutional Review Board (IRB)
Informed Consent Template Form
comply@k-state.edu | 785-532-3224

PROJECT TITLE:

Pre- and post-matriculation student success practices in community colleges: A survey of strong and integrated practice

PROJECT APPROVAL DATE:	TBD	**PROJECT EXPIRATION DATE:**	TBD	**LENGTH OF STUDY:**	TBD

PRINCIPAL INVESTIGATOR:

Dr. Richard Voorhees, KSU Professor of Practice

CO-INVESTIGATOR(S):

Lance Hawvermale, KSU doctoral candidate

CONTACT DETAILS FOR PROBLEMS/QUESTIONS:

Lance Hawvermale; hawvermale@ksu.edu; (479) 459-4550

IRB CHAIR CONTACT INFORMATION:

Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224; Heath Ritter, Acting Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

PROJECT SPONSOR:

Kansas State University

PURPOSE OF THE RESEARCH:

I am conducting a qualitative study on colleges that excel in the areas of pre- and post-matriculation A high percentage of students encounter barriers during this part of their academic journey and never earn a degree. My research focuses on how high-performing colleges are transforming their processes to remove many of those barriers.

PROCEDURES OR METHODS TO BE USED:

Data collection will be conducted through interviews. Each potential participant will receive a description of the study and an explanation of why they have been requested to provide an interview. With their permission, further information will be given to them, including a written summary of the research protocols, a consent form, and potential interview dates. These dates will be flexible so as best to match the schedules of each participant. Those participants are the source of the study's data. Each interview will last no more than one hour, allowing sufficient time for all protocols to be followed and all questions to be answered to the satisfaction of the participant. The interview participants will be

made aware in advance of the nature of the study. The researcher will have informed the participants how their particular college was selected. When the participant is clear on the background and purpose of the study, the interview will begin. All interviewees will be asked to reply to the same set of opening questions, creating as much consistency as possible in each session, but otherwise the conversation will be open-ended. The researcher will provide all relevant contact links and obtain the participants' permission to digitally record audio and video of the session, as well as an exact transcription—all of which will greatly aid in ensuring the context of the exchange is accurately depicted in the study. The researcher will take notes during the interview to provide additional commentary.

RISKS OR DISCOMFORTS ANTICIPATED:

No risks or discomforts are anticipated.

BENEFITS ANTICIPATED:

The study colleges will receive data that can be used for assessment and as performance indicators.

EXTENT OF CONFIDENTIALITY:

The participant's identity will be known to the researcher but will never be used in the study. All participants will be assigned an alpha-numeric code for the study. Data will be stored on an encrypted USB drive, which will be locked in a safe for a minimum of five years, after which point it will be destroyed. The data will be permanently wiped with Drive Wiper or similar software, and then the physical disk will be eradicated according to industry standards. Only the researcher will have access to the external drive which contains the data, which will be encrypted with a randomly generated password rated "strong" by Enpass Password Manager. Here is an example of a password rated "strong:" _CBRg/-~V*dky&vK6=#5/G

The information or biospecimens that will be collected as part of this research will not be shared with any other investigators.

Terms of participation: I understand this project is research, and that my participation is voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.

I verify that my signature below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

(Remember that it is a requirement for the P.I. to maintain a signed and dated copy of the same consent form signed and kept by the participant).

PARTICIPANT NAME:		
PARTICIPANT SIGNATURE:		**DATE:**
WITNESS TO SIGNATURE: (PROJECT STAFF)		**DATE:**