

INCREASING ACCESS FOR THE POST-TRADITIONAL STUDENT: AN ACTION
RESEARCH STUDY EXPLORING THE EFFICACY OF MINDSET AND GRIT IN THE
ADMISSIONS PROCESS

by

STEPHEN DEMERIS JENKINS

(Under the Direction of Wendy E.A. Ruona and Seung Hyun Han)

ABSTRACT

Nationally, post-traditional students (PTSs) are denied access to public four-year universities because of previous academic failures and low scores on high-stakes exams. The purpose of this action research (AR) study was to learn from the methods and outcomes of a public four-year university that considered factors other than previous grade point average (GPA) and standardized exams scores in the admissions process for PTSs. An AR team of higher education professionals worked with the Admissions Appeals Committee at a regional public four-year university to reconstruct the admissions appeals process to include mindset and grit as influential predictors of future academic success. AR methodology was used to systematically evaluate the mindset and grit of PTSs who had been denied admission.

To evaluate the PTSs' mindset, the AR team used the frame of Dweck's (1986) theory of implicit intelligence to assess a growth or a fixed mindset. To evaluate PTS' grit, we used Duckworth's (2007) work focusing on the ability to sustain interest in and effort toward very long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Two research questions guided this study: (1) What can be learned from considering mindset and grit as factors related to

the academic success of PTSs at a public four-year university? (2) What can be learned about using alternative metrics in the admissions process for PTSs at a public four-year university? Consistent with the literature, this short-term study provided further support for a relationship between mindset and future academic GPA. Also consistent with Duckworth's (2016) studies connecting grit with persistence, grit was found to be related to retention in this study. The AR team also learned that collaboration, incorporating new voices, pre-understanding, role duality, and access were significant factors in creating the conditions necessary to support the use of alternative metrics in the admissions process at this four-year public university. This study highlights the potential utility of mindset and grit in the admissions process for PTSs, and they should be explored further.

INDEX WORDS: Action research, Post-traditional students, Nontraditional students, Adult students, Testing, Higher education, Admissions, Academic success, Alternative metrics, Alternative methods, Mindset, Grit, Non-cognitive methods, Nontraditional methods

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STEPHEN DEMERIS JENKINS

B.A., Morehouse College, 2002

M.B.A., Mercer University, 2010

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STEPHEN DEMERIS JENKINS

Major Professor:	Wendy E.A. Ruona Seung Hyun Han
Committee:	Karen E. Watkins Laura L. Bierema

Electronic Version Approved:

Ron Walcott
Interim Dean of the Graduate School
The University of Georgia
May 2020

DEDICATION

This doctoral dissertation is dedicated to Golden Washington Jenkins.

Golden Washington Jenkins, my grandmother, whom I affectionately called “mama,” was 100 years old when she passed from this life to the next in 2015. She was a leader who had an immeasurable influence on all who were fortunate enough to know her. She raised me. She taught me. She loved me. She was great. She is one of the primary reasons why I am on this journey to becoming a doctor. I am on this journey because she believed I could. Correction, she believed I *would*; she *knew* I could.

As I reflect on all the years I resisted her wisdom, I did not comprehend, at the time, that she was challenging me in order to push me beyond mediocrity. She was teaching me to be focused and steadfast. She was trying to prepare me to be a leader. I began to think about the conversations we would have about life and how she wanted me to get “as much education” as I could. I could hear her reciting to me, at 30, the same things she recited to me when I was 10. When she did not believe I was giving my best, she would say, “Good, better, best. Never let it rest, until your good is better and your better is best.” When I complained about how hard something was, and that it was too difficult for me, she would remind me, “Someone said that it couldn’t be done, but he with a chuckle replied, that ‘maybe it couldn’t,’ but he would be one who would not say so until he tried. So he buckled right in, with a bit of a grin, and a hint of a smile on his face. And he started to sing as he tackled the thing that couldn’t be done, and he did it.” Mama, I did it.

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

In 2019, a criminal conspiracy to influence undergraduate admissions decisions made national news. More than 50 people were charged with illegally influencing the college admissions process by submitting inflated student test scores and bribing college officials. This national scandal shined a bright light on the competitive nature of college admission and the extreme importance placed on test scores. Indeed it is common for a high school student to spend many hours preparing for national college entrance exams such as the American College Testing (ACT) test or the Scholastic Aptitude Test (SAT). Scores on these exams are meant to imply a certain level of intellect and ability to succeed in college, and because high school students represent more than 50% of all students entering college (National Center for Education Statistics [NCES], 2016a), admissions criteria are written for this population of students.

At most colleges, the largest group of incoming students enroll immediately after high school. However, this is not the case at Lakeland University, a pseudonymous public state-supported institution in the southeastern United States. Lakeland University has an enrollment of just over 7,000 total students; since 2014, the university has enrolled an average of 3,200 students each year, and less than 30% of those students have enrolled directly from high school.

Lakeland University is one of several institutions governed by a body identified, for the purposes of this study, as the State Board (SB). The SB has established regulatory admissions policies based on institution and student type for each of its member institutions, which include more than 20 public colleges and universities. These institutions are grouped according to type;

each group has its own mission, scope of desired impact, and core characteristics. The SB establishes admissions policies for each group as well as for the three broad types of students whom it serves: freshman, transfer, and nontraditional. Each of these broad student types is further divided into subgroups. For example, a student entering college directly from high school is classified as a *traditional freshman student*. This study focused specifically on students whom the SB defines as *nontraditional*, or students who have been out of high school for at least five years and whose high school class graduated at least five years previous. A nontraditional student who has never attended college is classified as a *nontraditional freshman*. Accordingly, I refer to this group of students throughout this dissertation as the *post-traditional freshman* (PTF). Moreover, a *nontraditional transfer* student is a nontraditional student who has attended college and has earned fewer than 30 semester hours of transferrable college credit at the receiving institution. Thus, I refer to this group of students as *post-traditional transfer* (PTT) students. I refer collectively to the preceding groups as *post-traditional students* (PTSs).

The former president of Excelsior College, John Ebersole, originally coined the term *post-traditional* (Aslanian, 2017) to describe the emergence of cross-generational students aligned with the innovation economy's emphasis on lifelong learning (Soares, 2013). I argue that the suffix *non* (meaning not) in *nontraditional* has a more negative connotation than the suffix *post*, which simply points to a period beyond. Though the standard nomenclature and associated data include the broader definition of the nontraditional student, this study substituted the SB's use of *nontraditional* with the term *post-traditional*.

Table 1 displays data related to PTS applications for admission submitted to Lakeland University from fall 2014 to fall 2016. (PTSs can also apply in the spring and summer semesters, but the largest number of applications, by far, are received in the fall.) Application-to-enrollment

percentages for PTSs registered at roughly 28% between 2014 and 2016, while transfer applicants, who share a similar demographic, averaged roughly 50%. Further, since 2014, 40% of the PTS applicants denied admission were denied because of grades earned over 10 years earlier, and 25% for grades earned over 15 years earlier. Most other prospective students were denied admission because of failure to pass the entrance exam.

Table 1

Prospective Students and Enrolled PTSs at Lakeland University from Fall 2014-2016

Semester	Applications	Incomplete	Denied	Admitted	Enrolled
Fall 2014	328	178	31	119	98
Fall 2015	360	147	26	187	115
Fall 2016	360	232	19	109	84

Note. Internal data from Lakeland University's admissions database. Data show the applicant files for nontraditional students and their progress through the admissions funnel.

As mentioned previously, both traditional and PTSs may be classified as freshmen students. The SB has established a formula, the Freshman Index (FI), to assess traditional students' institutional readiness. Traditional students seeking entrance into four-year universities must meet minimal requirements of the FI, which is calculated by combining a student's SAT or ACT scores and high school grade point average (HSGPA). The following are the FI formulas utilized by the SB:

$$\text{SAT FI} = 500 \times (\text{HSGPA}) + \text{SAT Critical Reading score} + \text{SAT Math score}$$

$$\text{ACT FI} = 500 \times (\text{HSGPA}) + (\text{ACT Composite} \times 42) + 88$$

Further, institutions governed by the SB are permitted to set higher requirements for admission but are not allowed to lower them. Using this weighted formula, the higher the traditional students' HSGPA, the less the FI is negatively impacted by lower test scores. Conversely, the

lower the students' HSGPA, the higher the test scores will need to be to positively influence the FI. As such, the FI is used as a tool to ensure that the weight of all of the traditional students' academic progress is considered in the admissions process.

Similar to the traditional freshman student, the PTS is required to provide evidence of high school graduation. Documentation indicating compliance may comprise an official copy of the student's high school transcript. Additionally, the institution may consider English, math, and writing assessments similar in style and format to the ACT or SAT. If the student previously attended any college or university, official transcripts from that institution are required as well.

However, unlike the traditional freshman student, the PTS does not have an index for weighing the sum of their academic progress. For instance, PTF admission rests solely on whether the student graduated from high school and met the minimum score requirements of the ACCUPLACER test, which is the required entrance exam for the PTF. The PTT, in addition to the requirements of the PTF, must have earned at least a 2.0 grade point average (GPA) on all college coursework attempted, regardless of how old the grades are. The current admissions system at Lakeland places a tremendous amount of weight on previous academic performance—which may not be indicative of current abilities—and tests with questionable validity.

Lack of Validated Testing

Until the fall of 2016, PTF students at Lakeland University were required to take the Compass exam, which was developed by the creators of the ACT. The Compass served primarily as a placement tool for colleges. Under the direction of the SB, Lakeland used the exam as both a placement tool and a means of determining admissibility for PTF students. Similar to the ACT, the Compass was an adaptive test; a student's answer to one question determined subsequent questions. This adaptability was built into the exam to assess the student's level of

understanding of various concepts. The math section included questions on pre-algebra, algebra, geometry, trigonometry, college math, matrix algebra, and discrete math. The reading section included questions on critical-thinking skills, skimming, and paragraph structure. The writing section required the student to write an essay, testing the student's use of punctuation, sentence structure, and vocabulary.

In 2016, ACT eliminated Compass. The exam, created in 1983, was discontinued in part because of what ACT spokesperson Ed Colby (as cited in Fain, 2015) called “the test’s limitations in measuring college readiness” (para. 10). Fain (2015) added that many adult students, who placed into remedial courses based on Compass scores, might succeed in college-level courses after taking a brief refresher course on academic material. Moreover, some argued that non-cognitive skills should be a factor in admissions decisions for adult students. Undoubtedly, the results of Scott-Clayton’s (2012) study encouraged ACT to reexamine Compass. She found that one third of students who placed into remedial classes because of Compass scores could have passed college-level classes with a grade of B or better.

Scott-Clayton’s (2012) study evaluated the predictive validity of Compass as a measure of collegiate success. The study employed data from over 42,000 first-time entrants within a large urban community college system and found that the overall correlation between scores and later course outcomes was “relatively weak, especially in light of the high stakes to which they are attached” (p. 37). Scott-Clayton elaborated:

Given that students ultimately succeed or fail in college-level courses for many reasons beyond just their performance on placement exams, it is questionable whether their use as the sole determinant of college access can be justified on the basis of anything other than consistency and efficiency. Allowing more students directly into college-level

coursework (but perhaps offering different sections of college-level courses, some of which might include supplementary instruction or extra tutoring), could substantially increase the numbers of students who complete college-level coursework in the first semester, even if pass rates in those courses decline. (p. 37)

The focus of this study was course placement, which was consistent with the primary purpose of Compass. However, tools like Compass remain problematic since they rely on invalid metrics to assess collegiate success.

Since the discontinuation of Compass, Lakeland University and many other higher education institutions have replaced it with the ACCUPLACER, the College Board's adaptive math, reading, and writing exam. (The College Board also developed the SAT.) Yet, there are few data to suggest that this exam is any more predictive than Compass as a placement tool. An analysis conducted by Achieve, a Washington-based nonprofit, found that more than 2,000 questions from admissions and placement exams may not have fully measured the knowledge and skills necessary for college preparedness (Olson, 2007). Achieve president Michael Cohen (as cited in Olsen, 2007) added:

What we found is that the tests that are out there developed for very specific purposes, don't fully or completely reflect the kinds of knowledge and skills that are being incorporated into state high school standards in math and English. And if they don't reflect those skills, but the tests are used anyway, and used for accountability, then they will have the effect of narrowing the curriculum, and thereby reducing, or at least not improving, preparation for college. (p. 5)

While Olson focused primarily on first-time college students, Mellard and Anderson (2007) maintained that, regarding the ACCUPLACER and adult students, "correlations are likely to be

attenuated because student level factors such as attendance, drop out, motivation, and perseverance have great effects on course grades, and these factors are not taken into account by ACCUPLACER” (p. 14).

Several empirical studies have examined the predictive validity of college entrance exams, but only a handful have centered on the ACCUPLACER—and most of these studies have been conducted by the test maker (Scott-Clayton, 2012). The College Board (2016) itself states in the ACCUPLACER user manual that “the primary function of ACCUPLACER placement assessments is to assist with determining whether students are prepared for a college-level course or if they would benefit from a developmental course” (p. 5). This manual describes the test as a placement, diagnostic, and college-readiness tool for high school students, and as a means of determining dual-enrollment program readiness. There is no mention of the exam being used as an admissions tool or as an evaluation tool for nontraditional-age students.

Of the five paragraphs of the manual that describe how the ACCUPLACER is best used, four paragraphs expound on how it could be used to assess high school students, and one paragraph describes how it could aid in the placement of non-native speakers of English. Adult student are not mentioned at all. The adoption of ACCUPLACER as a tool for testing college readiness for the PTS obviously has its flaws. The use of a previous GPA as a predictor of future academic success has its challenges as well.

GPA May Be an Inadequate Measure

There are significant concerns regarding the fairness, validity, and predictability of current “high stakes tests” (Scott-Clayton, 2012, p. 2) for both traditional students and PTSs. Likewise, there are still more questions than concrete answers concerning GPA. Though many researchers have studied GPA as an indicator for college success, their results have been largely

inconclusive. The usefulness of GPA as a variable depends on the population studied and how success is determined (i.e., first-year retention, overall college GPA, graduation, etc.).

Furthermore, the research has not addressed the relevance of GPA considering gaps in time between high school and college or between one college and another. Spitzer (2000) found that academic efficacy, self-regulation, and social support, rather than high school GPA, were positive predictors of college GPA for nontraditional undergraduate students. In her study of 88 nontraditional students (aged 25 and over), Spitzer assessed participants along five personal dimensions, two learning dimensions, and two collegiate goals. She concluded that past academic performance and career development were relevant but not significant indicators of future collegiate success.

In a more recent study, researchers at the University of Missouri found that traditional measures such as Graduate Records Examinations (GRE) test scores and undergraduate GPA were inadequate for predicting the success of nontraditional students, many of whom were returning to school after spending several years in the workforce (Hurst, 2014). Charles Menifield (as cited in Hurst, 2014), then professor of public affairs at the University of Missouri, added:

GPA and GRE scores do not predict the success of incoming students who are returning to school after spending time working in their careers as accurately as they do traditional students. We found that the success of those students depends much more on the skills they have developed and use every day in their current careers. If a graduate program requires a lot of writing, and a potential student hasn't written anything in years in their current job, then they might struggle in school much more than someone who writes on a daily basis. The same can be said for any particular skill. (para. 2)

While this research focused on nontraditional graduate students, I argue that the results are applicable to nontraditional undergraduate students as well.

There is ample evidence suggesting that test scores and GPA may not be an optimal measure for determining admissions for students, particularly PTSs. The question then is, What is an alternative? Although there has been national dialogue on the best ways to support and ensure success for the adult student, little of that dialogue has addressed college entrance criteria. This is the time to expand the conversation around creating an environment for success that includes the search for alternative methods for identifying the college readiness of PTSs.

The Emergence of Nontraditional Assessments for Admissions

In early 2017, a senior academic leader from the SB, referred to pseudonymously as “Dr. T,” arrived at Lakeland University. Dr. T delivered a presentation on creating pathways to increase student success. He spoke about the ways SB-governed institutions could help support currently enrolled students. Of the topics discussed, what resonated with me the most was the emphasis he placed on helping students craft a roadmap from enrollment *through* (not just *to*) graduation. Dr. T’s point was that it is imperative for those in higher education administration to help students visualize post-graduation realities, including future career opportunities and prospects.

During his presentation, Dr. T shared some fascinating statistics reflecting the correlation between student success and the student’s purpose for attending college. Dr. T shared several quantitative and qualitative studies that he had conducted when serving in a similar leadership capacity in another state. He inferred from his findings that students entering college with a clear purpose and established goals had stronger grades and higher retention rates. In one of the studies he shared, incoming first-year students at a college in the South who took an educational

developmental course were given a survey to assess their academic mindset entering college and how the students perceived their learning environment. Dr. T did not share the precise sample size but inferred that it was substantial. The results of the research revealed that several non-cognitive factors were positively correlated with academic success. The study showed that students who held a positive perception of the purpose of the coursework expressed connectedness and a sense of belonging to their institution. Moreover, students believed they were capable of learning the material and were confident when interacting with faculty and staff. They also self-reported evidence of grit and perseverance. Indeed, such students were remarkably more successful at the conclusion of their first semester. Dr. T termed this phenomenon a “productive academic mindset.”

Dr. T also reported that the same survey was administered to students after the semester concluded. Although students had been at the college for an entire semester, the results were virtually identical to those from when they first arrived on campus. Dr. T concluded that “how the learner feels about themselves and their environment has the same level of impact on academic outcomes as preparation.” He referenced the work of Carol Dweck whose research has explored the concept of growth and fixed mindsets.

Overall, Dr. T’s presentation intrigued me and encouraged me to dig deeper into research about nontraditional factors that could lead to student success. The focus of Dr. T’s presentation was on impacting the success of the enrolled student. I easily correlated his post-admission success initiatives with potential preemptive pre-admission factors that could aid the student-success process. Further, Dr. T’s presentation confirmed for me that there is more to projecting one’s propensity for academic success in college besides past academic performance and exam

scores. Subsequently, I enthusiastically launched my exploration into theories that would inform this assertion and, ultimately, the aims of this study.

Purpose of the Study and Research Questions

The purpose of this action research (AR) study was to learn from the methods, processes, procedures, and outcomes of a public four-year university that considers factors other than standardized exams and GPA in the collegiate admissions process for post-traditional students. Specifically, the study addressed the following research questions:

1. What can be learned from considering mindset and grit as factors related to the academic success of PTSs at a public four-year university?
2. What can be learned about using alternative metrics in the admissions process for PTSs at a public four-year university?

This study examined the process required to create change using the methodology of AR and exploring the use of nontraditional factors to evaluate the college readiness of PTSs at a four-year public university.

Significance of the Study

The retention and graduation of nontraditional students has been of national interest for more than a decade. Institutions have received federal pressure to produce a more qualified and educated workforce so the United States does not fall further behind globally (Advisory Committee on Student Financial Assistance, 2012). Nontraditional-age students currently represent about 40% of undergraduate college students in the United States, and it is projected that this population will continue to grow through at least the year 2025 (NCES, 2016). Now that nontraditional-age students account for nearly half of all students in college, the pressure is mounting to retain and graduate these students (Advisory Committee, 2012; Caruth, 2014;

Dougherty, 2007; Goncalves & Trunk, 2014; Ritt, 2008; Ross-Gordon, 2011; Wyatt, 2011). An enormous amount of research has been conducted on student persistence, and many studies have identified the needs of nontraditional students and how the collegiate environment can be modified to serve those needs. There is also a considerable body of literature that centers on how adults learn. Yet, very little research has addressed the admissions experience and process for the nontraditional student.

Nationally, PTSs are denied access to public four-year universities because of previous poor academic performance and low scores on high stakes exams. The futures of many of these students are impacted by a misconception of who they currently are as learners. I believe that higher education should adopt alternative methods for ensuring that PTSs are given equitable opportunities to gain entrance into public four-year universities. Moreover, as an admissions professional for nearly 20 years, I feel it is my duty and obligation to review critically admissions criteria and to question current practices of colleges and universities.

The primary aim of this study was to influence change. Specifically, the study set out to accomplish three goals: (a) to influence change in the AR team, from passive observation of the problem to active participation in addressing it; (b) to influence change in the minds of the stakeholders who will evaluate the relevance and significance of this challenge; and (c) to open the door for future research, which could support localized changes in the admissions process for PTSs. AR methodology offers a unique vehicle for facilitating change that can contribute to a collective understanding of the ways the larger higher education community views access for PTSs.

Review of the Literature

This section reviews the literature on higher education admissions in the United States. It provides a historical overview of how and why admission decisions have been made, the evolution of the student populations seeking admission to four-year colleges and universities, and a theoretical framework for this study as well as future research. My review comprised an examination of nearly 50 peer-reviewed articles, books, and dissertations from databases available through University of Georgia libraries, such as EBSCO Complete, Google Scholar, ProQuest, and ERIC. The literature search focused primarily on publications from the previous 30 years, though it did include several seminal works as well. In order to expansively understand how to develop interventions for creating change, this literature review examined both conceptual works and empirical studies. This section lays the foundation for the rationale for this study as well as future research.

The History of University Admissions

The use of admissions criteria to determine entrance eligibility to U.S. postsecondary institutions dates back to 1635 with the creation of the first higher education institution, Harvard University. For most of the 1700s, college presidents interviewed each college applicant. The interview evaluated the candidate's knowledge of classical languages, specific readings, and moral character. However, admissions processes and criteria changed during the last half of the 1800s as the number of college professors increased, and faculty members eventually relieved the college president of the responsibility of conducting admissions screening (Beale, 1970). Consequently, admissions requirements became inconsistent as different universities and academic departments enacted their own admissions criteria. As a result, most 19th-century high schools had to prepare their students to meet a variety of different admissions standards, creating

a great disparity in admissions practices (Cremin, 1964). A widely recognized need for more uniformity ultimately spurred the establishment of the College Entrance Examination Board, or College Board.

The College Board was formed in 1900 by 14 private universities to begin developing common admissions criteria, the first of which took the form of essays. From the 1920s to 1960s, there was an intensive effort to enforce greater objectivity in admissions criteria. During this time, admissions tests gained recognition as the main tool for accomplishing such objectivity. In 1925, the College Board developed aptitude tests in an effort to provide an indication of a candidate's ability to successfully perform college-level work. A year later, the first Scholastic Aptitude Test (SAT) was administered to 8,040 college applicants (Cabrera & Burkham, 2001). First developed by Alfred Binet, the SAT was designed to measure aptitude, or innate mental ability (Gose & Selingo, 2001).

In the 1940s, the popularity of the SAT grew, and the test was established as a standard when the University of California decided to require the test from all of its college applicants (Gose & Selingo, 2001). Other institutions immediately followed suit and began to implement this practice as an admissions norm. In 1959, the American College Testing (ACT) program joined the College Board in offering standardized objective tests. Unlike the SAT, however, the ACT sought to measure the extent to which high school students ~~has~~ mastered college-related skills and knowledge (Cabrera & Burkham, 2001). As college enrollment grew and the value of education became more popularized after World War II, standardized tests made it possible for college admissions officers to efficiently and economically process thousands of college applications.

Beginning in the last few years of the 20th century, admissions tests have become subject to increasing criticism, with some questioning their validity as measures of college success (Adelman, 1999; Camara & Schmidt, 1999; Hiss, 2001). In fact, in a speech given in 2001, the former president of the University of California system recommended that institutions stop requiring high school students to take SAT so that applicants could be evaluated in a more comprehensive and holistic way (Gose & Selingo, 2001). Others have raised potential issues with the use of standardized testing like the SAT and ACT for college admissions. Some researchers have suggested that the exams are racially biased (Camara & Schmidt, 1999; Jencks & Phillips, 1998; Sackett, Schmitt, Ellingson, & Kabin, 2001), are skewed toward students from more affluent backgrounds, or are simply not good predictors of collegiate success (Atkinson & Geiser, 2009). These assertions speak to a potential inequality that exists when applying the same admissions criteria to students who are classified as traditional students. This inequality is presumably much greater among a population that is not leaving one academic environment, like high school, and going directly into another academic environment, like college.

The Growth of the Adult Student Population

The number of adult students—those 25 years of age or older—attending colleges and universities increased from 29% in 1970 to 43% in 2009 (Caruth, 2014). Since 2009, that number has remained relatively constant (Aslanian, 2017). Institutions of higher education in the United States were originally established to educate privileged youth (Rudolph, 1990); however, colleges and universities over time have increasingly been educating more adult students (Kasworm, 2012). While this student population has grown precipitously, the assessment and related admissions screening procedures for adult students has largely mirrored that of the traditional-age population for which the university was designed. Kasworm (1990) cited studies

by Waters (1971), Lunneborg, Olch, and de Wolf (1974), and Fincher (1983) that noted the potential difficulties of adult students gaining admission to higher education and excelling academically when "young adult criteria" are applied. These criteria include the use of aptitude tests that were originally designed for traditional-age populations. Fincher (1983) and Lunneborg et al. (1974) conducted investigations concerning the predictive validity of aptitude tests in relation to adult undergraduate students, and both noted the limited utility of test scores as predictive performance indexes.

Aslanian (2017) confirmed that the growth in the adults student population in U.S. higher education has produced new realities and rewards, but also challenges, for institutional leadership. Most adult learners have work experience or are working and have unique life experiences, exposures, and motivations that are oftentimes different from those of the traditional freshman entering college. Thankfully, creating environments in which adult students can succeed at a public university environment has become a national point of emphasis in higher education. For instance a federal effort was launched in 2011 to decrease the achievement gap between the United States and the rest of the world. "At the federal level, the goal to have the world's highest rate of college completion is now front and center. Achieving this important goal by 2020 will require a formidable effort to increase the nation's college degrees and certificates" (Advisory Committee, 2012, p. iii). In addition to the federal agenda, colleges are feeling increased pressure to recruit and retain adult students because projections of a national decline in the number of high school graduates between the 2012 and 2023 (NCES, 2016) translate to declines in college enrollment. Thus, many U.S. colleges and universities are looking to be more "adult-friendly" in order to avoid the decrease in enrollment that this dilemma would present.

Given this national attention, many scholars and practitioners have recently written about the need for greater access and support for nontraditional students. Perna (2010) wrote:

Creating an institutional culture that promotes the success of working students will require a campus wide effort that involves the faculty and administration. Colleges and universities should encourage, reward, and support faculty members who adapt their instructional practices to promote the educational success of working students. Through one-on-one interactions, professors and administrators can promote adult working students' sense of belonging and validate their presence on campus, thus encouraging their academic success. (p. 31)

Perna (2010) suggested that not only should colleges and universities work to eliminate barriers for adult students to be successful, but that they have an obligation to do so. Some of her ideas around aiding in student success included offering courses in the evenings, weekends, and in distance-education formats. She also recommended establishing course schedules in advance, offering access to academic advising and other support services at night and on weekends, offering online course registration and academic advising, providing childcare options, and providing space for students to study between work and school.

Lee College, a small public two-year community college in Texas, developed a summer bridge program (SBP)—Project LeeWay—with the explicit purpose of creating access and support for adult students. Typically, bridge, or pipeline, programs are reserved for high school students entering college for the first time to aid the transition into college. Overall, research findings have suggested that participation in a bridge program increases the likelihood of a student earning higher grades, persisting, and earning degrees (Strayhorn, 2011). Lee College's

SBP is a unique program that targets low-income and at-risk nontraditional students seeking high-wage nontraditional careers (Hoops & Kutrybala, 2015).

Project LeeWay has been in existence for over 20 years. The program curriculum includes developmental education in mathematics, reading, and writing, as well as career exploration, computer skills, and study-skills instruction. The support services in the program include free childcare, textbooks, and transportation for students as well as assistance with obtaining financial aid and employment. Hoops and Kutrybala (2015) studied this program to understand how nontraditional students felt they had developed, both academically and personally, during their respective experiences with a technical and vocational SBP. They looked at archival qualitative data collected over several years of the program and found that approximately 64% of the students reported that they had grown personally and affectively; more than 36% reported they had grown academically; and 77% attributed the majority of their growth to instructors rather than program content. Overall, the data showed that the majority of the students felt that the SBP was beneficial for them.

Susan C. Aldridge, University of Maryland University College president, stated, “Adult students have a difficult time with the traditional format and length of semesters, parking on the campus, getting to a traditional campus with a traditional schedule from their place of work” (as cited in Pelletier, 2010, p. 3). She went on to say, “To the extent possible, support services for adult students should be available online or through a 24/7 call center so that the students are not at a disadvantage just because they happen to be working” (as cited in Pelletier, 2010, p. 4). As the evidence suggests, much research and many resources have been dedicated to providing environments for adult student success upon entering college. However, much work remains, and little attention has been paid to the entry criteria for this population of students at public four-

year universities. Reevaluating the admissions process for post-traditional students is one way to extend the conversation regarding what support for the adult student truly looks like.

Open-Access and Proprietary Institutions

Typically, in the current landscape of higher education, PTSs who are not admitted to a traditional public or private four-year university have one of two options for earning a bachelor's degree: enroll in a public open-access institution or enroll in a proprietary college or university. Open-access institutions offer admission—and the opportunity to pursue a college degree—to any student with a high school diploma or GED certificate. By definition, these schools have nonselective admissions criteria. Initially, two-year or community colleges were the only open-access options for students; now there are many public four-year open-access options.

In 2010, the National Center for Public Policy and Higher Education reported that the largest gains in graduation rates from 2000 to 2010 were at open-access or nearly open-access colleges and universities. These findings came out of research conducted at Vanderbilt University that challenged a commonly held notion that the best way to increase graduation rates is to make colleges more selective, since highly selective colleges tend to have higher rates of completion. However, this research found that nonselective colleges and universities, defined as those that accept at least 80% of applicants, were leading the way in increasing graduation rates. Oftentimes facts are shielded by misperceptions.

In the United States, there is a stigma surrounding attendance at open-access institutions, which are often depicted by the media or by family, friends, and colleagues as “second rate schools” or as a last resort option if students are not accepted into a “traditional college” (Tucciarone, 2007). Proper (2010) noted that “there are many factors that go into college selection, as well as college perception. The main socializing agents of family, friends, school,

and media can all help to create how community colleges are perceived; perhaps that is where America's bias begins" (p. 2). Though Tucciarone (2007) referenced community colleges specifically, this stigma also applies to open-access colleges, which are often perceived as substandard compared to traditional four-year universities.

Beyond such perceptions, nonselective colleges and universities have other challenges. Grove (2017) pointed out that the Vanderbilt study showed that graduation rates at open-access institutions tend to drop as the age of the student population increases. Indeed, those whom this study identified as PTSs actually tended to have a lower graduation rate and an increased need for remedial courses. Thus, while PTSs have the option of attending nonselective institutions, Grove (2017) suggested that few adult students graduate in four years, and while tuition is often lower than at more selective schools, grant aid is often limited.

Open-access institutions rarely have the endowments and financial resources for financial aid that more selective colleges and universities have, which means less support for students. On a macro-level, a significant amount of media attention has been given to the student-debt crisis and its impact on the economy. At over a trillion dollars, student-loan debt in the United States now exceeds credit-card debt, diverting from consumer spending, investments, retirements savings, and much more (Ross, 2014). Postsecondary credentials are increasingly important for individuals, for the health of the nation, and for competition in a global economy; however, not enough student aid is made available to support capable low-income students through to completion at open-access schools.

On a micro-level, unprepared students who fail to complete programs of study often use their own limited personal resources or accumulate personal debt. As a result, the likelihood that these students will complete a program when they are ready or elect to pursue another

postsecondary pathway is low (Ross, 2014). Nationally, public higher education funding has been reduced sharply, and when private competitors make strong plays in the market, federal pressure on policymakers and administrators to produce student-success gains becomes palpable on open-access campuses. With fewer resources, fewer well-prepared students, and increased completion demands, only so many legitimate student-success gains can emerge.

Though proprietary for-profit colleges—which are managed and governed by private organizations and corporations—have a student population similar to that of open-access colleges, they serve over a million more students. Moreover, students who attend proprietary colleges incur, on average, two and a half times more debt than students who attend similar programs at public institutions (Crawford & Jervis, 2011). Between the early 2000s and 2010s, enrollment at proprietary institutions increased by over 225% (National Conference of State Legislatures, 2013). Proprietary colleges and universities have become attractive options for students because they often provide flexible scheduling with year-round enrollment, online course options, small class sizes, and convenient locations. These characteristics have helped attract a growing population of students, particularly working adults, part-time students, and students with children.

This growth has also raised concerns at both the state and federal levels regarding the quality of education these institutions offer, the amount of money in scholarships and loans they receive, the tactics they use to attract students, and the success of their graduates in finding jobs (National Conference, 2013). Critics of for-profit institutions have argued that many of these schools and their associated programs leave students with large amounts of debt, few employable skills, and a heightened risk of not completing a degree at all. A highly publicized report, *Subprime Opportunity: The Unfulfilled Promise of For-Profit Colleges and Universities*

(Lynch, Engle, & Cruz, 2011), concluded that, in general, graduates of for-profit institutions have difficulties finding careers with a high enough salary to repay student loan debt. Such reports raise questions about the value of an education from many for-profit institutions. It appears that, in large part, the investment that students have made at for-profit institutions had not offered returns that justify the high cost of attendance (National Conference, 2013).

According to Lynch, Engle, and Cruz's (2011) report, 60% of students at two-year for-profit institutions earned a certificate or degree within three years, compared to just 22% of students at open-access public community colleges; however, those graduating from programs at for-profits incurred substantially higher student loan debt than their public counterparts. Proprietary institutions tend to be more professional and career-focused. Students are encouraged to choose a career path upon admission, whereas students at open-access institutions are usually not directed to do so. Rather, open-access institutions tend to emphasize more of a general-education focus. Both of these approaches have merit for particular students.

There are arguments for and against both open-access and proprietary schools. A student's decision to attend one or the other should come down to personal choice and preference. However, for a PTS who wants to earn a four-year degree but is denied admission at a four-year public or private non-profit institution, open-access or proprietary institution are the only remaining higher education options. While both are viable, the current system robs PTSs of choice. PTSs who did not excel on an exam or who may have struggled academically in the past should have other options for demonstrating college readiness.

Alternative Evaluation Methods

In the early 2000s, criticism of admissions testing began to grow louder. Several colleges and universities across the United States began to deemphasize SAT and ACT scores as a key

measure for admission (Sportelli, 2014). Private schools, including Sarah Lawrence College, Wake Forest University, and Wesleyan University, adopted what is known as a test-optional policy. This policy gives students the option of submitting ACT or SAT scores as a part of their admissions application. In 2014, Bryn Mawr College became a test-optional institution because “national and institutional data ... revealed that standardized testing does not necessarily predict students’ success on campus” (Sportelli, 2014, para. 2).

According to Sportelli (2014) in 2017 Bard College, a small private liberal arts institution in New York, began offering their own admissions examination, an online essay, to students as an alternative to submitting standardized test scores (Bard College, 2018). Prospective Bard students who took the exam chose from 21 questions created by Bard professors and wrote four 2,500-word essays. The essays were graded, and if the applicant earned a grade of B+ or higher, the student received an offer of admission. Bard did not eliminate traditional admissions testing; in fact, the college reported that the vast majority of students who applied still submitted the SAT. However, the college reported that offering the alternative attracted more prospective students who wanted to be evaluated outside of typical admissions criteria (Bard College, 2018). Based on an interview with Bard’s vice president of student affairs and director of admissions, Mary Backlund, Sportelli (2014) reported:

The faculty got excited about offering essay questions and a platform that would allow students to have all the materials to answer the questions and experience a real college essay exam. Students who like to write and think they could better express themselves through their writing are those interested in opting for the Bard Entrance Exam. It’s not a surprise that if a student doesn’t feel like they are a standardized person, they would choose this option. (para. 6)

Although standardized tests were initially implemented to put students on a level playing field for aptitude assessment, they have since become a divisive factor among applicants. Consequently, these tests have been criticized for failing to serve as a reliable indicator for college success. A recent National Association for College Admissions Counseling (NACAC) study has confirmed that view. In that study, student data were collected from 28 institutions that had adopted a test-optional policy. The schools ranged in undergraduate enrollment from 1,500 to 20,000 students and included long-time users of the test-optional policy as well as recent adopters. Four cohorts of student data, representing a dataset of 955,774 individual applicant records, were collected (Syverson, Franks, & Hiss, 2018).

Syverson, Franks, and Hiss's (2018) study resulted in no definitive conclusion regarding the practice of test-optional admissions policies. However, the findings suggested that such policies work well for many types of institutions:

[They appear] to offer a less obstructed path to higher education for this population of students who feel that their scores do not match their ability. We do not argue that institutions should entirely eliminate consideration of the ACT and SAT for all their students, however, we do continue to question whether the value-add of testing is large enough to justify the price, time spent, financial cost, and emotional drain being paid by students due to societal preoccupation with these tests. We find that there is plenty of room in American higher education for diversity of process, allowing test-optional admission to contribute to that diversity. Some have asked, "Why ignore a piece of information if it is available?" And we agree. Indeed, when a student chooses to be a non-submitter that, too, is a valuable piece of information. (p. 4)

In June 2018, the University of Chicago, one of the most selective universities in the United States, decided that it would no longer require undergraduate applicants to submit standardized test scores (Rhodes, 2018). While the university would still allow applicants to submit their SAT or ACT scores, university officials said they would let prospective undergraduates send transcripts, videos, and other nontraditional materials to supplement their applications. The university's vice president and dean of admissions explained why the university made this bold decision:

We were sending a message to students, with our own requirements, that one test basically identifies you. We wanted to really take a look at all our requirements and make sure they were fair to every group, that everybody, anybody could aspire to a place like U Chicago. (Rhodes, 2018, para. 5)

While the previously mentioned examples of optional admissions practices centered on traditional students, there are nontraditional admissions methods being deployed as well. For instance, Youngstown State University, a public state university in Ohio, allows admission to nontraditional students by using nontraditional educational sources. Youngstown defines a *nontraditional student* very liberally as anyone who is either 25 years or older, assumes multiple life roles, such as that of a parent, spouse/partner, full-time employee, or caregiver, someone returning to school after taking a break, an active reserve or veteran of the military, or any student, regardless of age, whose primary life roles and responsibilities exist independent of the university and take precedence over the student role in times of crisis or stress (Youngstown State University, 2018).

As an alternative to taking an admissions exam, nontraditional students applying to Youngstown State University are allowed to gain admission by highlight relevant learning, work,

and life experiences through what is known as the Prior Learning Assessment (PLA) process. PLA is an option that enables students to demonstrate what they have learned outside the classroom and translate that learning into college credit. PLA validates learning acquired through corporate training programs, extensive volunteer activity, military service, workplace experience, civic engagement, individual readings and studies, and training sponsored by professional organizations or governmental agencies. Credit is awarded to students for these prior learning experiences. Students must demonstrate their mastery of the knowledge in a subject area, which is verified by department challenge exams, creation and evaluation of a portfolio, or demonstration of military-service learning (Youngstown State University, 2018).

Youngstown State University is one of more than 50 colleges and universities that partnered with the American Council on Education's Alternative Credit Project. This project encouraged greater acceptance of students' alternative credit, and create a more flexible pathway toward earning a degree. While Youngstown was one of the few schools that used the PLA process as a factor for admissions, there is national interest in alternative ways to support post-traditional students. Indeed, dozens of four-year institutions have embraced the practice of making entrance tests optional, according to a database maintained by the National Center for Fair and Open Testing (2018), whose research has shown that nearly of all of these schools have reported increased applications and enrollment among these same groups.

The Landscape of Possible Alternatives

While most alternative evaluation methods have centered on traditional-age students, alternative methods for nontraditional students have begun to grow as well. Kafka (2016) created a table listing a wide variety of currently available instruments designed to assess nontraditional student characteristics that support college success (Appendix C). The tables lists each

instrument, its author, and general information about what factors the instrument assesses and how it is administered. Carlson, Geisinger, and Jonson (2014) provided detailed insights into the strengths and limitations of many of the instruments that Kafka listed. After learning more about each instrument, methodology, theoretical frame, and the factors assessed, I identified four that I considered to be most appropriate to the student population I was studying: (a) Sedlacek's (1993) assessment of intelligence using of the Non-Cognitive Questionnaire (NCQ); (b) Le, Casillas, Robbins, and Langley's (2005) rational empirical approach to constructing the Student Readiness Inventory; (c) Dweck's (1986) extensive work and research around implicit intelligence; and (d) Duckworth's (2018) recent and relevant work surrounding the philosophy of grit.

Non-Cognitive Questionnaire

Sedlacek (1993), one of the foremost authorities on the use of non-cognitive variables in the college admissions process, proclaimed, "The evidence is in. Studies have demonstrated it; articles have documented it; and practical applications have confirmed it. If you want to successfully admit and retain nontraditional students you should employ non-cognitive variables in your admission process" (p. 33). Sedlacek suggested that numerous studies have provided evidence that non-cognitive measures predict the success of nontraditional students better than standardized tests and previous grades. Sedlacek extended the work of Sternberg (1985), who proposed that there are three basic ways a person may show ability: componential intelligence, experiential intelligence, and contextual intelligence.

Kalsbeek, Sandlin, and Sedlacek (2103) applied Sternberg's (1985) principles to certain populations, specifically nontraditional students. Sedlacek (1993) offered eight non-cognitive variables that should be considered during the admissions process for nontraditional students: positive self-concept, realistic self-appraisal, the ability to understand and deal with racism,

preference toward long-term goals as opposed to short-term needs, access to a strong support system, successful past learning experiences, demonstrated community service, and knowledge obtained in a certain field. Sedlacek developed Non-Cognitive Questionnaire to assess these eight variables. Sedlacek (1993) conducted two experimental studies on the use of non-cognitive admissions measures, both of which are described in detail in the following sections. The first study focused on a group of applicants he defined as the "gray area" or "on the bubble" (p. 35), students whose traditional admissions assessments are below the usual acceptance level. The second study centered on a group of nontraditional students with scores that met the minimum admissions requirements.

Study 1: Students with low scores. A large state university had approximately 6,000 applications for 3,000 spaces in a first-year class. The primary goal in the admission process was to make fair selections but also, at the same time to maximize the number of nontraditional students, particularly African-Americans selected. The mean ACT composite score for all applicants was 22, out of a possible 36, while the mean ACT score for the 520 African-American general applicants was about five points lower. If the university went strictly by ACT scores, it would have accepted only about 150 African-American applicants, with only half of these likely to actually enroll. These numbers were unacceptably low, but the university did not want to lower the ACT scores required for admission. Therefore, this institution decided to consider both traditional measures (i.e., ACTs and high school grades) and non-cognitive measures by administering the NCQ.

The university required all general applicants to complete the NCQ. Admissions personnel developed two multiple regression equations based on some pilot studies and normative information. One regression equation was for traditional applicants, and the other was

for nontraditional applicants. The approximate weights given to measures were about two thirds to traditional measures and one third to non-cognitive variables in the traditional applicant equation. For nontraditional applicants, the NCQ was weighted about 60% compared to 40% for ACT score and grades.

Admissions office personnel at the institution were trained to consider the experience of each applicant to determine which equation to use. Difficult decisions were assigned to a committee consisting of admissions staff, faculty, students, and campus administrators. The assumption was that if the institution wanted nontraditional students, it would have to consider this in the admissions process and insure that the assessment of these students included as many other factors as possible. The institution did not change any other aspects of its admissions, retention, or recruiting programs, or any of its special programs or curricular offerings.

By employing the new procedures, the university admitted 310 of the African-American applicants, and 208 actually enrolled. The institution's usual graduation rate after six years was about 60% for traditional students and about 30% for African-American students. After employing the new admissions procedures, the six-year graduation rate for traditional students was 65% and 44% for African-Americans, respectively. While the university did not employ a control group for comparison, officials at the institution were pleased with the new system.

Study 2: Students with high scores. The second of Sedlacek's (1993) studies focused on a small selective institution with applicant mean SAT scores near 1,300, out of a maximum of 1600. The institution had been successful in attracting and enrolling Native American, Chicano, and African-American students with good grades and test scores, but was not retaining them. While about 85% of the traditional students who matriculated eventually graduated, only 50% of nontraditional students finished; most left in good standing within their first two years.

Therefore, the school decided to implement a new advising system for all students, traditional and nontraditional, which relied heavily on non-cognitive variables.

All students were administered the NCQ at orientation, after admission, but prior to enrollment. A non-cognitive profile and a specific prescriptive program were developed for each student. Faculty and staff were trained to serve as resource specialists in one or more of the non-cognitive variables. Most on the campus embraced this proactive approach and seemed to enjoy it. Aside from these positive feelings, two years later, retention was 90% for traditional students and up to 74% for nontraditional students.

Limitations of the NCQ. Despite its merits, the NCQ does have its critics. Thomas, Kuncel, and Crede (2007) review 78 different articles or dissertations that contained data referencing the NCQ. They found that only 42 contained data that were usable based on sample sizes and statistical relevance. Their findings suggested that the NCQ scores were largely unrelated to college performance as measured by GPA, college persistence, and credits earned. They contested that the NCQ as a whole was not found to be a valid selection tool for admissions purposes because, for the persistence criterion, only one correlation greater than .10 was obtained. Thomas et al. suggested that the GPA analyses included a sufficient number of studies to place confidence in the 90% credibility intervals, and for all scales, the intervals are narrow and include zero, suggesting that the validity of the NCQ scores probably did not vary much from zero from situation to situation.

Thomas et al. (2007) also discovered that the mean differences suggested that, on average, minority students scored somewhat higher on the NCQ than did European-American students. As a result, the use of the NCQ tended to increase the admission of minority students based on built-in biases. The authors suggested that the initial validation study and several

studies that followed (Ancis & Sedlacek, 1997; Fuertes, Sedlacek, & Liu, 1994) incorrectly concluded that the NCQ is a valid predictor of GPA and persistence in college. Though not convinced that the NCQ is a valid predictor of college success, they suggested that the Student Readiness Inventory (SRI) may be a more valid tool.

Student Readiness Inventory

Le et al. (2005) developed the Student Readiness Inventory to measure psychosocial and academic-related factors found to predict college academic performance and retention. The SRI is a 108-item measure of motivation, academic skills, and social engagement, and is described as a tool that students can use to identify personality or skill characteristics that could be developed to increase their chances for college success, and as an intervention tool for students who are at risk to drop out (Le et al., 2005). ACT has since published this tool. The framework for the instrument is based on the work of Robbins et al. (2004), who proposed that the composite of psychosocial and academic predictors was best understood by the constructs of motivation, academic-related skills, and social engagement. They also pointed to the limitations of empirical research, due to the absence of well-constructed studies.

Despite those limitations, the meta-analysis provided a framework for guiding the development of what Le et al. (2005) deemed a comprehensive psychosocial and skills inventory for predicting college success. The SRI was designed to measure the content domains of psychosocial and skill factors, conscientiousness, goal focus, and academic self-efficacy (Le et al., 2005). The instrument was designed to capture the constructs of potential predictors of college success, and it includes a rational model for directing scale construction efforts using those three content domains. The initial conceptual model consisted of 10 constructs grouped under three content domains. The academic-related skills domain included four constructs: study

skills, problem-solving skills, communication skills, and emotional control skills. The social engagement domain included three constructs: sociability, social connection, and teamwork.

Le et al. (2005) study of the impact of psychosocial and academic-related factors on academic performance was developed by examining the educational theories of Tinto (Bean, 1988). Other studies have examined the impact of achievement motivation. For instance, Eppler and Harju (1997) used academic performance within a model that also incorporated student background factors, study habits, and work commitments (Robbins et al., 2004). In Eppler and Harju's (1997) inaugural study, 50 institutions participated. From those institutions, 6,456 questionnaires were returned. The relationship between the scales, high school GPA, and ACT scores appeared consistent with the theoretically expected pattern, thus providing some initial evidence for the construct validity of the scales. Specifically, commitment to college, social connection, academic discipline, and academic self-confidence were somewhat correlated with high school GPA. Academic self-confidence was found to be somewhat correlated with students' ACT assessment scores.

Subsequent longitudinal studies have shown that the SRI factors are significant predictors of college GPA (Bailey, 2012; Komarraju, Ramsey, & Rinella, 2013; Peterson, Casillas, & Robbins, 2006;), providing further evidence of the construct validity of the SRI. Overall, the studies have suggested that students' high school GPA and both ACT and SAT test scores reveal different patterns of non-cognitive or psychosocial skills and varied levels of readiness among college freshmen. There is also evidence that some SRI factors may represent malleable characteristics that can be cultivated over time (Robbins et al., 2004). Interestingly, a large number of students who had higher test scores self-reported being more academically self-confident, but overall they scored relatively low on several non-cognitive factors. In contrast,

students scoring relatively low on tests and high on non-cognitive psychosocial skills persisted at a higher rate after their first year of college. Komarraju, Ramsey, and Rinella (2013) suggested that these findings should encourage selection committees to not rule out prospective students based solely on their standardized test scores.

Further, the results of the SRI as a measure help support the use of an additional factor in the college admissions process. The collective results of the studies discussed previously suggest that students' GPA and test scores are not the only effective predictor of future college performance (Robbins et al., 2004). Instead, the incremental predictive validity of the SRI suggests that a more accurate prediction of college success is provided when accounting for certain non-cognitive factors. Conceptually, academic discipline seems critical to maintaining good grades through college; therefore, it stands to reason that this factor would be a strong predictor of college GPA. These results suggest that students with high conscientiousness, diligence, and persistence are more likely to perform well academically.

Limitations of the SRI. Numerous studies have used the SRI as a predictor of college success for traditional first-year students who take either the ACT or SAT, but very few explored the SRI's predicative nature in relation to nontraditional students. By design, the instrument's purpose is to identify personality or skill characteristics that may be developed to increase a student's chances for college success. However, the purpose of this study was to identify students who may already possess the internal attributes required for college success that an exam cannot quantify. The instrument is also meant to serve as tool for students who are at risk of dropping out. This study evaluated PTSs' internal motivations and drivers to determine if there are other factors outside of test scores and GPA that are better indicators of college success.

While this SRI appears to be an effective tool for the purposes for which it was designed, it may not be adequate in the context of this study.

Implicit Theory of Intelligence

In the late 1970s, Carol Dweck and others began to extend the body of research regarding motivation through multiple studies with children and ultimately concluded that the study of motivation is a study of goal-oriented activity (Elliott & Dweck, 1988). Dweck (1986) proposed that there are two major goals that individuals pursue in achievement situations: (a) performance goals, in which individuals seek to maintain positive judgments of their ability and avoid negative judgments by seeking to prove, validate, or document their ability and not discredit it; and (b) learning goals, in which individuals seek to increase their ability or achieve mastery.

According to this theory of achievement motivation, Dweck (1986) suggested that children specifically will adopt either adaptive or maladaptive stances in the face of accomplishing an established goal. Adaptive motivational patterns are described as those that “promote the establishment, maintenance, and attainment of personally challenging and personally valued achievement goals”; while “maladaptive patterns, are associated with a failure to establish reasonable, valued goals, or ultimately to attain valued goals that are potentially within one's reach” (Dweck, 1986, p. 1040). An adaptive motivational pattern is characterized as one that seeks challenges and has a high level of persistence when faced with obstacles. Individuals exhibiting such patterns would be identified as *mastery-oriented* (Dweck, 1986; Elliott & Dweck, 1988; Grant & Dweck, 2003). The study of goal orientation led to the conceptualization of an individuals' implicit theories, or beliefs, about oneself (Dweck & Leggett, 1988).

According to the implicit theory of intelligence (Dweck, 1986), those who believe that intelligence is malleable adopt an incremental theory of intelligence and are learning-goal-oriented, while those who believe that intelligence is fixed hold an entity theory of intelligence and are performance-goal-oriented (Dweck, 1986). Those with a learning goal orientation are often referred to as having a growth mindset, while those with a performance orientation are often referred to as having a fixed mindset. Central to this model is the premise that implicit theories of intelligence determine the way one approaches learning and achievement situations, the kinds of goals they adopt, and the effort they will use in order to persist when difficulty arises. Those who hold an incremental theory of intelligence are primarily focused on improving their basic skillset and gaining new knowledge, and are learning-goal-oriented. Those who hold an entity theory of intelligence focus primarily on achieving positive outcomes and avoiding negative ones, and are oriented toward performance goals. Dweck (1986) suggested that this pursuit of performance goals leads to minimization of effort and a failure to persist in the face of challenges. The relationship between goal orientation and persistence is illustrated in Figure 1.

<i>Achievement Goals and Achievement Behavior</i>			
Theory of intelligence	Goal orientation	Confidence in present ability	Behavior pattern
Entity theory (Intelligence is fixed)	Performance goal (Goal is to gain positive judgments/avoid negative judgments of competence)	If high → Mastery-oriented Seek challenge High persistence but If low → Helpless Avoid challenge Low persistence	
Incremental theory (Intelligence is malleable)	Learning goal (Goal is to increase competence)	If high or low → Mastery-oriented Seek challenge (that fosters learning) High persistence	

Figure 1. Achievement goals and behavior model based on Dweck's implicit theory of intelligence. Adapted from Dweck (1986).

Research on motivation and mastery goals from 1970 through most of the 1990s was conducted almost exclusively on children. These studies showed repeatedly that when faced with difficult situations, children who believed that intelligence was malleable were still positive, made self-motivating statements, and made corrections about ways to approach tasks. The children who believed that intelligence was fixed felt discouraged, helpless, and ill-equipped, and made self-degrading remarks in the face of difficult situations or tasks (Smiley & Dweck, 1994). Most conclusions drawn from the findings emphasized the developing mind of a child and surrounding factors that influence beliefs. It was not until the late 1990s when researchers began to expand Dweck's (1986) initial findings and evaluate their implications on college students.

Implicit theory of intelligence and college students. Eppler and Harju (1997) applied Dweck's (1986) model at the college level, specifically to nontraditional students. They examined the relationship between goal orientation and academic performance in 262 undergraduate students who were divided by traditional and nontraditional status. The two groups were given Roedel, Schraw, and Plake's (1994) Goals Inventory to measure achievement and goal orientation. The Goals Inventory consisted of questions regarding behavior, attitudes, reflected learning, and performance orientation as described by Dweck and Leggett (1988). In addition Eppler and Harju (1997) looked at SAT scores, cumulative GPA at the end of the semester, demographic factors such as age, sex, race, class, parent's level of education, and how many hours per week the students spent working and studying.

The study found that both groups of students rated themselves higher on learning goals than on performance goals (Eppler & Harju, 1997). The learning-goal orientation was positively correlated with successful academic performance for both groups as well. Goal orientations were found to be better predictors of academic success than student status. Though the relationship

between performance goals and academic success was not as clear, students who were equally learning- and performance-oriented had the lowest cumulative GPA. The findings showed that the traditional students who were less successful academically endorsed entity theory and had low confidence in present abilities. For the nontraditional students, the only causal connection to lower grades was the number of hours worked: The more hours the nontraditional student worked, the lower the students' grades.

Eppler, Carsen-Plentl, and Harju (2000) expanded upon Eppler and Harju's (1997) study and assessed various components of Dweck's (1986) model and its implications for college students. The goals of Eppler et al.'s research were to examine both the separate and combined effects of learning and performance orientations on achievement, clarify the role of performance orientation in academic achievement, and compare both traditional and nontraditional students. The study involved 153 undergraduate students and compared four goal-orientation groups—high learning, high performance, mixed goals, and uncommitted—using a variety of measures related to the implicit theory of intelligence model.

The first component in Eppler et al.'s (2000) study was a single-item measure to determine an individual's implicit theory of intelligence. A sample item for an individual who identified with entity theory read, "You have a certain amount of intelligence and you can't do much to change it" (p. 359). Learning- and performance-goal orientations were again measured using Roedel et al.'s (1994) Goals Inventory. Failure attributions were measured using the Academic Attributional Style Questionnaire (Peterson & Barrett, 1987), which was designed to measure the reasons people use to explain why unfavorable events happen to them. The questionnaire presented negative academic situations for which students had to identify the major cause of the situation as if it happened to them, and they rated how important it was. Finally,

optimism was measured using the Life Orientation Test created by Scheier, Carver, and Bridges (1994).

Eppler et al.'s (2000) study showed that both learning and performance orientations correlated positively to an influence on grades. Both traditional and nontraditional students with stronger performance orientations were more likely to use a “negative explanatory style” (p. 353) which was also correlated to lower grades. Nontraditional students had a significantly higher learning orientation, lower performance orientation, and higher GPAs than traditional students did. These two groups did not differ significantly in their beliefs about intelligence, use of negative failure attributions, or general optimism.

Dweck extended her own model to the college environment through five robust studies with students at Columbia University (Grant & Dweck, 2003). These studies included a diversity of students who varied in age, race, and major. The studies included 451, 54, 87, 92, and 128, distinct participants, respectively. In these five studies, including a longitudinal study in a premedical course, Grant and Dweck (2003) showed that the impact of learning and performance goals depended on how those goals were operationalized. Active learning goals predicted active coping, sustained motivation, and higher achievement in the face of challenges among the college students evaluated. Each study used varying instruments and measured different types of performance and learning goals for the purpose of tackling “unresolved issues in current achievement goal research” (Grant & Dweck, 2003, p.550).

Overall, learning-goal-oriented students had a positive correlation with mastery-oriented indicators, which included sustained intrinsic motivation, planning, and persistence. Those with strong learning goals also reported using more mastery-oriented methods in response to past obstacles. In the longitudinal study with the premedical students, learning goals predicted better

processing of course material, higher intrinsic motivation, higher grades, and greater improvement over time. The impact of learning goals on performance **was** predominant when a high degree of challenge was present, when a task was personally important, or when the processing of complex material was necessary (Grant & Dweck, 2003).

Limitations of implicit theory of intelligence. Some have asserted (e.g., (Lueftenegger & Chen, 2017) that there is little empirical evidence that individuals' belief about the malleability of intelligence is strongly inversely related to their belief in the fixedness of intelligence. Evaluating the malleability of intelligence, therefore, is likely incongruent with the multidimensional view of the construct, which might especially be true for adults because they are more likely to have had many opportunities to develop competencies in different contexts over multiple phases of life (Dupeyrat & Mariné, 2005). Another question that has been raised in challenge to implicit theories is whether one can simultaneously hold both an incremental and an entity theory in the same domain (Lueftenegger & Chen, 2017). Most conceptual articles and empirical studies have treated the two implicit theories as mutually exclusive beliefs. In fact, in Dweck's studies, implicit theories have been conceptualized as opposite ends of a single continuum (Dweck, 1996; Dweck & Leggett, 1988; Grant & Dweck, 2003). Although Dweck and colleagues have recognized the possibility that one can hold both beliefs at the same time, this did not lead to major changes in the operationalization of implicit theories in their empirical studies (Lueftenegger & Chen, 2017).

Furthermore, a limited amount of research has examined implicit intelligence as a factor in academic success for adult students. Though findings from such studies have been consistent, there may be factors specific to the schools or the population of students studied that may have affected academic performance. This theory does not consider other factors that may influence

achievement such as home environments, school conditions, and other external variables that have an impact on how students perform (Blackwell, Trzesniewski, & Dweck, 2007). Further research is needed to assess the long-term effects of the identification of an implicit mindset at a given time.

Grit

In 1958, Fritz Heider presented a theory suggesting that people assign cause of a circumstance to either an internal or an external attribute (Kelley & Michela, 1980). The theory maintains that internal attribution is the process of assigning the cause of behavior to some internal characteristic, rather than to outside forces. That is, the cause of a personal behavior is assigned to factors such as beliefs, mood, motive, or personality. For example, if a student with a high level of internal attribution failed an exam, a common response from the student would be, “I should have studied harder.” By contrast, external attribution is the process of assigning the cause of a personal behavior to a circumstance, event outside a person's control, or a situation, rather than to internal factors. This would relate to the assignment of fault for a choice to a factor beyond an individual's control. For instance, if a student with a high level of external attribution failed an exam, a common response from the student would be, “The exam was just too hard.” Heider first introduced his theory as a way to describe how individuals perceived their own personal success or lack thereof (Silver, 2012).

Later, Weiner (1979) applied Heider's (1958) theory in several studies in which he asked the participants why they were or were not able to achieve certain goals. He identified four distinct categories for organizing their responses: task difficulty, luck, innate ability, and effort. Those who attributed success or failure to the difficulty of the task believed that they succeeded or failed based on how difficult the task was. Those who attributed success or failure to luck

believed that they succeeded or failed based on chance. Those who attributed success or failure to an innate ability believed that they succeeded or failed based on talent or lack thereof. Finally, those who attributed success or failure to effort believed they succeeded or failed based on the work they put into the task. A significant finding from the studies was that the first three attributions were all external and beyond the control of the individual. Effort was the only internal attribute the individuals believed they could control.

Using Dweck's (1986) theory of implicit intelligence and Heider's (1958) attribution theory as a framework, Duckworth (2007) conducted a plethora of research around the concept of grit, which has been defined as the tendency to sustain interest in and effort toward very long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007). The two central ideas related to grit are that (a) it predicts success more reliably than talent or intelligence quotient (IQ) and (b) anyone can learn to be "gritty" (Duckworth, 2016). For the purposes of this study, I focused only on grit's predictive nature and those factors that may identify someone as possessing or not possessing grit. After extensive research, Duckworth (2016) generated a formula suggesting that effort is twice as important as other factors (see Figure 2).

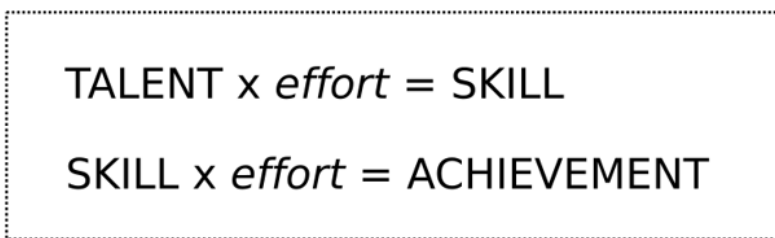

$$\text{TALENT} \times \textit{effort} = \text{SKILL}$$
$$\text{SKILL} \times \textit{effort} = \text{ACHIEVEMENT}$$

Figure 2. Duckworth's formula asserting that effort is twice as important as talent and skill in accomplishing long-term goals. Adapted from Duckworth (2016).

Duckworth (2016) validated this formula using multiple studies that tested the importance of the non-cognitive trait of grit. These studies included ivy-league undergraduates and cadets in the U.S. Military Academy. Overall, the studies found that grit did not relate positively to IQ but was highly correlated with conscientiousness (Barrick & Mount, 1991). Grit also demonstrated incremental predictive validity of success measures over and beyond IQ and conscientiousness. Collectively, these findings suggest that the achievement of difficult goals requires not only talent, but also sustained effort over time (Duckworth, Peterson, Matthews, & Kelly, 2007). For the purposes of this study, I examined two studies associated with adult populations.

Grit and adult populations. In the first study, Duckworth, Peterson, Matthews, and Kelly (2007) used a cross-sectional approach to validate a self-reporting measure of grit. Conducted in 2004, the study was used to launch the development of what is known as the Grit Scale. Study participants were adults ages 25 years or older. Survey data were collected from 1,545 participants; the mean age was 45, with 73% women and 27% men. The association with higher levels of lifetime schooling among individuals of identical age was used to assess the predictive validity of grit. The broad age range of the adults in the study allowed Duckworth and her team to explore a second question: “Does grit grow with age?” (p. 1090). The findings suggested that more educated adults were higher in grit than less educated adults of equal age. In addition, college graduates, when age was controlled, were higher in grit than most other groups. Similarly, participants with an associate degree were significantly higher in grit than those with less education and, interestingly, also higher in grit than those with a bachelor’s degree, although this difference failed to reach significance. Finally, because all information in this study was self-reported and because grit was not compared with other traits, the findings could not completely

rule out the possibility that the observed positive associations were the consequence of “social desirability bias” (p. 1092).

In the second study, Duckworth et al. (2007) tested whether the study results around educational attainment and age would remain constant when conscientiousness and other “Big Five traits” (Barrick & Mount, 1991) openness, extraversion, agreeableness, and neuroticism were controlled: “That is, does grit provide incremental predictive validity over and beyond Big Five traits? Also, is there evidence that grittier individuals make fewer career switches than their less gritty peers?” (Duckworth et al., 2007, p. 1093). Conducted in 2006, this study involved 706 participants ages 25 and older; the median age of the participants was 45, with 80% women and 20% men. The participants completed the same measures as the participants in the first study. In addition, they also indicated the number of times they had changed careers, and they completed the Big Five Inventory.

The results showed a correlation between grit and conscientiousness more than any other Big Five trait. The incremental predictive validity of grit for education and age over and beyond conscientiousness and other Big Five traits was supported as well. When conscientiousness was added as a covariate, both age and education remained significant predictors. Further, when neuroticism, agreeableness, extraversion, and openness to experience were added to this analysis, both age and education remained significant predictors.

Other comparisons revealed that individuals who had completed only some college were lower in grit than any other group, and individuals who had earned an associate degree or a graduate degree were higher in grit than individuals with a bachelor’s degree. Grit was lowest among those 25 to 34 year olds, and highest among those 65 years and older. Similarly, grit had incremental predictive validity for number of lifetime career changes over and beyond age,

conscientiousness, and other Big Five traits. The concept of grit—that effort impacts success—is so simple and logical that, until Duckworth et al.’s research, a scale measuring predictive qualities of grit had not been developed. Now that a validated tool is available, one that can provide significant insights, it seems illogical not to use it.

Limitations of grit. Duckworth herself acknowledged the limitations of grit. She alluded to the fact that one can easily fake a higher grit score or distort grit results by simply holding a different standard by which behavior is judged (Duckworth & Yeager, 2015). Duckworth (2018) also cautioned that grit and the associated Grit Scale should only be used for research and self-reflection, and that its limitations make it inappropriate for many other uses, including admitting students to college. Thus, grit as a stand-alone resource is an inadequate tool.

Possible Alternatives: Reflection and Summary

While both the Non-Cognitive Questionnaire and the Student Readiness Inventory are viable tools, they were not the best fit for this study. Despite their limitations, the outcomes of the collective work of Dweck and Duckworth related to implicit intelligence and grit, respectively, seemed to be more appropriate for assessing a post-traditional student’s ability to persist when faced with the challenges of returning to college after an extended amount of time or attending for the first time. The breadth and depth of the numerous validated studies regarding mindset and the emerging scholarship of grit seemed to represent the most appropriate lens for examining the challenges that PTSs faced at Lakeland University. The following sections provide an explanatory frame for the theory and philosophy undergirding this study.

The Empirical and Conceptual Landscape

In this section, I review previous empirical studies and the conceptual framework central to this research. Specifically, Tables 2 and 3 display the empirical literature that was most influential in establishing my conceptual framework.

Table 2

Key Empirical Studies on Implicit Theory of Intelligence

Author(s) and Study	Findings	Learning
Dweck (1996). Implicit theories as organizers of goals and behavior.	Implicit theories are individual basic assumptions about self that guide the choice and pursuit of goals. These self-theories create a meaning system or conceptual framework for goal achievement. These theories are salient and important to an individual's belief about their own intelligence and has a direct correlation to goals and actions.	Implicit self-theories relationship to goals and behavior may provide a contextual platform for suggesting that achievement can be linked to this non-cognitive factor.
Eppler & Harju (1997). Achievement motivation goals in relation to academic performance in traditional and nontraditional college students.	Nontraditional students showed a stronger commitment to learning goals than traditional-age students. Both traditional and nontraditional students who endorsed only performance goals had lower overall GPAs. There was a strong correlation between GPA and SAT for the traditional students but no correlation between GPA and scores for the nontraditional students. Correlation between learning goals and GPA was significant between both groups.	Learning and performance orientations proved to be valid constructs for evaluating achievement goals and motivation. Nontraditional students who were away from school for a year or more were generally more committed to learning-goal orientation than traditional students.
Eppler, Carsen-Plentl, & Harju (2000). Achievement goals, failure attributions, and academic performance in nontraditional and traditional college students.	Learning orientation was stronger for nontraditional students; the older the student, the more strongly they endorsed a learning orientation. Overall, both traditional and nontraditional students who embraced a learning orientation had higher GPAs and optimism.	There was a positive correlation to learning orientation and higher grades regardless of the age of the student. However, generally, the older the student, the greater the learning-goal oriented.

Author(s) and Study	Findings	Learning
Grant & Dweck (2003). Clarifying achievement goals and their impact.	In five studies, including a longitudinal study in a difficult pre-med course, the authors showed that the impact of learning and performance goals depended on how they were operationalized. Active-learning goals predicted active coping, sustained motivation, and higher achievement in the face of challenge. Among performance goals, ability-linked goals predicted withdrawal and meant poorer performance in the face of challenge; normative goals did not predict decrements in motivation or performance; and outcome goals were in fact equally related to learning goals and ability goals.	Overall, learning-goals-oriented students had a positive correlation with mastery-oriented indicators, which included sustained intrinsic motivation, planning, and persistence. Participants with strong learning goals also reported a history of having used more mastery-oriented coping methods in response to past setbacks. The impact of learning goals on performance was seen chiefly when a high degree of challenge was present, when a task was personally important, or when the processing of complex material was necessary.
Dupeyrat & Marine (2005). Implicit theories of intelligence, goal orientation, cognitive engagement, and achievement: A test of Dweck's model with returning to school adults.	Mastery goals had a positive impact on learning activities and outcomes, while striving to demonstrate competence (performance goals) or to avoid effort (work avoidance) had a negative influence on learning and achievement. Additionally, data suggested that mastery goals had a positive influence on academic achievement through the mediation of effort expenditure. However, the predicted effects of implicit theories of intelligence on goal orientation and cognitive engagement in learning failed to emerge.	Dweck's theory appears to be appropriate and fairly consistent with examining achievement motivation and academic performance in adult students.

Table 3

Key Empirical Studies on Grit

Author(s) and Study	Findings	Learning
Duckworth et al. (2007). Grit: Perseverance and passion for long-term goals.	When education level was controlled for, grit increased monotonically with age; however, 25- to 34-year-olds did not differ significantly from 35- to 44-year olds, and 45- to 54-year-olds did not differ significantly from 55- to 64-year-olds. Students with the highest grit scores overall had higher self-reported GPAs; however, it is interesting to note that grit was also associated with lower SAT scores.	Grit appears to be positively correlated with age and GPA, but not correlated with standard measures of IQ.
Eskreis-Winkler, Shulman, Beal, & Duckworth (2014). The grit effect: Predicting retention in the military, the workplace, school, and marriage.	Grit was not correlated with either general intelligence or physical fitness. Those with the highest grit scores were less likely to drop out. The results indicated that juniors with the highest level of grit were more likely to graduate from high school. The effect of grit on retention held when controlling for academic conscientiousness, school motivation, situational factors, standardized achievement test scores, and demographic variables.	Grit appears to be predictive of retention when controlling for traditional predictors.

Conceptual Framework

Action research was tool used in this study to foster change. The AR construct served as the vehicle for identifying alternative methods for accessing PTS college readiness. AR requires collaboration, communication, teamwork, and extensive planning. It also requires the sharing and presentation of the established plan with stakeholders, soliciting feedback, taking that feedback back to the AR team, and engaging in the cyclical process of modifying, sharing, and presenting until stakeholder buy-in is achieved. The AR process requires engagement at multiple levels throughout the observation, data gathering, experimentation, and evaluation stages of the research. This engagement can produce rewarding and ultimately transformative change.

The findings from Dweck's (1986, 1988, 1995, 1999) extensive body of research as well as from other contemporary studies around implicit theories of intelligence lend credibility and reliability to the research. The findings from the key empirical studies presented in the preceding tables support the rational for recognizing the theory of implicit intelligence as a credible tool for evaluating the learning orientations and mindsets of PTSs. The diversity of populations studied, the volume of data collected, and the consistency of the findings also reinforce the theory of implicit intelligence as a respectable measure. However, its noted limitations as a singular factor in the admissions process for PTSs would conceivably make it an inconsistent and unreliable measure.

The emerging scholarship on grit has developed around the tenets of implicit theories of intelligence. However, grit in its purest form requires action and demonstration. That is, *grittiness* requires evidence of sustained persistence toward a long-term goal; absent this evidence, one cannot be validated as possessing grit. Without a substantial amount of supporting long-term empirical research (as are available for implicit theories)—and because of the ease of

manipulating grit surveys—grit cannot be held up as a singular evaluation tool for PTSs. Figure 3 illustrates the conceptual framework of this study and shows how the AR process served as a conduit for change in determining if the combination of a growth mindset and grit has the propensity to correlate to academic success for the PTSs in the study. The meta-learning that emerged through this study adds to the body of research around constructing solutions to this problem.

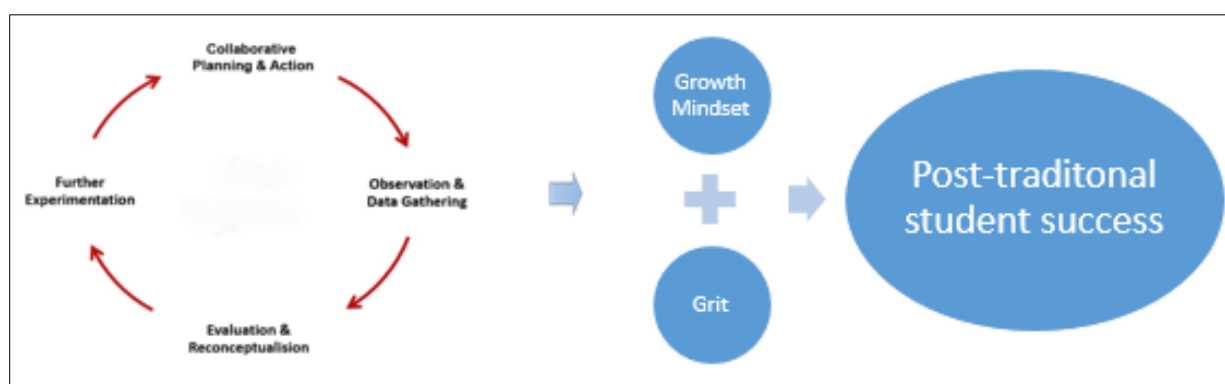


Figure 3. Conceptual framework of the study.

Literature Review Summary

There are numerous initiatives, resources, support groups, advocacy groups, and organizations designed to support adult students. In 2011, the Advisory Committee on Student Financial Assistance (2012) convened a panel of state and institutional experts in the area of higher education to address three key questions of policy and practice related to adequately serving nontraditional students: (a) What are the primary barriers to access and persistence for nontraditional students? (b) What are the most promising state and institutional strategies and policies for overcoming those barriers? (c) What role should the federal government play in encouraging states and institutions to implement best practices? The report produced from this

meeting and submitted to the U.S. Department of Education provided many substantive ways to address the key questions posed. Recommendations included creating access to new funding sources for nontraditional students; creating a national standard for PLA; enhancing support services; establishing retroactive degrees; providing more college entry and exit points; expanding online programming and support; further implementing predictive modeling and early-alert systems; and offering shorter class terms. While all of these proposed solutions are valuable and viable, and could make a tremendous difference, none addresses alternative methods for identifying, prior to enrollment, post-traditional students who are more likely to succeed in college. The advocacy surrounding the topic of providing an environment for success for adults in higher education has been a national topic of concern, but there has been little examination of the admissions process for these students.

Dweck's (1986) theory of implicit intelligence maintains that those who believe they can increase their intelligence are learning-goal-oriented, focus on improving skillsets, are committed to gaining new knowledge, and show a significantly greater amount of resiliency when faced with challenges. Duckworth (2016) conducted extensive research in a relatively short amount of time centering on the concept of grit as an intangible but significant factor of success. I argue that mindset and grit are better indicators of academic success in PTSs than past GPA and current exam scores. While the ability to grasp mathematical equations, understand the mechanics of writing, and develop critical-thinking and reasoning skills in a collegiate environment is indeed important, the innate ability not to give up when faced with challenges is at least equally important. As Barton (2015) wrote:

We worked with a large Southern state university system on a study pointing to a new way of identifying students who are most likely to drop out. The findings can help higher

education officials get a much clearer picture of which students need support and how best to provide it. The new analysis found that “mind-set,” a student’s sense of social belonging or grit, for example, is a stronger predictor of whether a student is likely to graduate than previously believed. So powerful, in fact, that it counts even more than external factors like standardized tests scores, income levels and whether the student’s parents are college graduates. (para. 3)

Cengage, a worldwide educational content, technology, and services company for higher education, surveyed over 700 instructors from around the United States. The survey asked just one question, “What do you believe is the number one factor in student success?” The most common responses were motivation and dedication:

A very large number of instructors mentioned that a student’s focus, commitment, and dedication play a central role in student success. Likewise, according to instructors, persistence plays a critical role. And as another instructor wrote, a successful student is one who has the determination to succeed and takes advantage of all opportunities for learning. (Strang, 2015, para. 1)

Regarding grit among adults, Duckworth and Eskreis-Winkler (2013) wrote:

In our cross-sectional analyses, grit increases monotonically throughout adulthood. One possibility is that people have a growing appreciation of the efficacy of effort as they age. Alternatively, consistent with the literature on identity formation, it may be that the value of specializing versus exploring diverse pursuits shifts as we age. (p. 1)

Given past research findings as well as anecdotal expert opinions, the notion that the admission of PTSs should consider factors outside of test scores and GPA seems logical. If Lakeland University’s admissions process for PTSs included factors such as mindset and grit,

this could systematically and fundamentally change the ways PTSs are admitted, thus leading to growth in enrollment, improved retention, and increased levels of academic success.

CHAPTER 2

METHODOLOGY

This chapter provides a methodological and procedural outline for the study. It describes the design of the study, the study participants, and the data-collection and analysis procedures, and discusses the methods employed to ensure trustworthiness and validity for the research. The purpose of this action research study was to learn from the methods, processes, procedures, and outcomes associate with a public four-year university that considered factors other than standardized exams and GPA in the admissions process for PTSs. Specifically, the study addressed the following research questions:

1. What can be learned from considering mindset and grit as factors related to academic success of PTSs at a public four-year university?
2. What can be learned about using alternative metrics in the admissions process for PTSs at a public four-year university?

The focus of this AR study was to learn from the process of increasing access for PTSs. In addressing Research Question 1, I collected and analyzed both quantitative and qualitative data; to answer Research Question 2, I used qualitative data only.

Action Research Approach and Methodology

Collaborative or cooperative inquiry was the AR approach that guided this study. Collaborative inquiry centers on research *with* rather than *on* people (Reason, 1998). It emphasizes that all participants are fully and actively involved in research decision making as

co-researchers. Cooperative inquiry takes place in research cycles around propositional knowing, practical knowing, experiential knowing, and presentational knowing (Reason, 1998).

Action research is considered antithetical to traditional research, because of its emphasis on collective inquiry and investigation (Reason, 1998). It was the collaborative participation and exploration of invested stakeholders that made this method best for the particular change effort examined in the study. AR demands self-reflective inquiry from both researchers and participants for the purpose of understanding and improving practices and methods. In AR, the reflective process is directly linked to action and is influenced by an understanding of history, culture, and local context (Baum, MacDougall, & Smith, 2006). The AR process for this study involved establishing an AR team, developing a plan for action, engaging other stakeholders, implementing the plan, observing the plan in action, evaluating the outcomes, and reflection.

The AR approach aims to engage in a collaborative inquiry process that is simultaneously concerned with bringing about change in organizations and co-generating actionable knowledge (Holian & Coghlan, 2013). Figure 4 illustrates the AR cycle, as conceived by Coghlan and Brannick (2014). Figure 5, however, represents a more accurate depiction of the AR cycle in this study. Chapter 3 elaborates on how this particular AR cycle impacted the research.

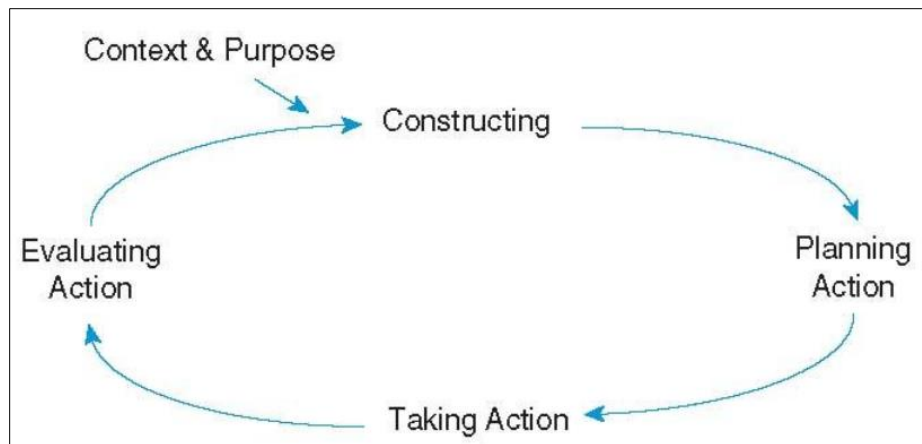


Figure 4. Action research cycle. Adapted from Coghlan & Brannick, 2014, p. 9.



Figure 5. Depiction of the action research cycle in this study.

The purpose of AR is to learn from the change process and produce positive change that leads to improvement of the process, experience, or outcomes for those involved. AR fosters meaningful learning throughout the entire process. The meta-learning that emerged during this study as a result of team members asking questions, probing further, and seeking solutions

guided our approach. Inquiring in this way drove how we constructed, planned, took action within, and evaluated the AR project. As we engaged in this process, the knowledge of what had worked, what had not worked, and what had yet to be tried provided a unique perspective on the problem.

AR tests knowledge in action, which is generally not true of traditional research (Coghlan & Brannick, 2014). Typically, action researchers are invested in solving problems, whereas conventional researchers emphasize drawing conclusions, advancing knowledge in the field, and gaining generalized insights. Conventional researchers pay close attention to remaining objective, creating distance between the researcher and the subject, and implementing controls. Action researchers, on the other hand, focus closely on relevance, change, and validity in action. AR seeks to close the gap between the scientist and the practitioner by using continuous, cyclical, and systematic processes of reflection, evaluation, and improvement of the quality of professional practices and methodologies that are specific to the immediate environment.

The local knowledge and personal investment of stakeholders that an AR study requires were ideal for addressing the complex, multidimensional, political issues in this study related to the admissibility of PTS. As action researchers, our thoughts, emotions, mental capacities, and ideals were instrumental to the research findings. As an AR team, we collectively challenged the notion that theory can inform practice, recognizing that theory can and should be generated *through* practice (Brydon-Miller, Greenwood, & Maguire, 2003). In this study, the AR team and stakeholders were central to the research findings and the learning process that AR sought to uncover.

Research Participants

There were two sets of participants in this study. One set comprised the post-traditional students who enrolled at Lakeland University for the first time in the fall 2018 and spring 2019 semesters. The second set consisted of the AR team members. At the time the study began, all of the AR team members were either faculty or staff at Lakeland University and had a vested interest in the academic access and success of PTSs. Each team member provided valuable input during the intervention process and, overall, added value to the research.

All PTSs admitted to Lakeland University during the fall 2018 and spring 2019 semesters, whether by meeting the standard admissions requirements or through the admissions appeals process, were invited to participate in this study. As mentioned previously, the PTS population consists of students who graduated from high school at least five years previous and either have never attended college or who attended college and earned fewer than 30 semester hours of transferrable college credit. In this study, PTSs self-identified their student classification on their initial application for admission, and this information was verified through the admissions process. For the purposes of this study, the newly admitted PTSs who were entering Lakeland University in the fall of 2018 were collectively referred to as Group 1, and students admitted in the spring of 2019 were collectively referred to as Group 2. Table 4 provides additional information about both groups.

Table 4

PTS Participant Information

PTS Group	Total Participants	Total Admitted Appeal	Total Average Age	Average Age Admitted Appeal	Male/Female
Group 1	43	12	29.4	36.5	12/31
Group 2	23	6	28.2	33.1	8/15

The AR team collaborated over the course of approximately one and a half years. We established specific goals from the beginning of our collaboration and discussed those goals regularly, either formally or informally. Data from team meetings, team emails, and personal interviews were collected throughout the process. We used all of these data to help answer Research Question 2.

Data Collection Methods

To answer the Research Question 1, the AR team examined specifically the influence of a growth mindset, or the belief that intelligence is malleable, and grit, or perseverance toward long-term goals, on academic success. To answer Research Question 2, the team sought to understand the necessary steps, processes, and approaches needed to modify the admissions process for PTSs at Lakeland University, a public four-year institution. Both qualitative and quantitative data were collected.

Quantitative Data

One hundred forty-two PTSs were admitted to Lakeland University for the fall 2018 and spring 2019 semesters. All of these students were invited to participate in this study, and 66 agreed to participate. Eighteen of the 66 participants were admitted by appeal, which represented 100% of those admitted via the appeals process. All of the participants were asked to complete a

16-item questionnaire that combined items from the Implicit Theory of Intelligence Scale (ITIS) (Dweck, 1999) and the Grit-S (Duckworth & Quinn, 2009). The questionnaire will be identified throughout this study as the Post-Traditional Student Questionnaire (see Appendix B). The items on the questionnaire asked students to rate on a Likert scale their level of agreement with statements suggesting that intelligence is fixed. The ITIS Likert scale ranged from 1 (strongly agree) to 6 (strongly disagree). Responses on the low end of the scale (1) indicated that the student believed intelligence fixed, while responses on the high end of the scale (6) indicated that student believed that intelligence is malleable. The ITIS scores were aggregated and the sum of the scores was tabulated for each PTS. Low-end scores between one and three ($n = 8$) suggested a performance-goal orientation, and high-end scores between four and six ($n = 48$) represented a learning-goal orientation and a growth mindset.

The Grit-S used a Likert scale as well, ranging from 1 (not much like me at all) to 5 (very much like me). The questionnaire asked students to match presented scenarios with their persona. Responses at the low end of the scale (1) indicated the presence of very little grit, while responses at the high end of the scale (5) indicated a high amount of grit. The scores from the Grit-S were averaged; the higher the average, the more grit the student was projected to have. This pre-enrollment questionnaire served as the first compilation of quantitative data collected for the study. Information regarding the selection of each instrument is outlined in the follow sections.

Implicit Theory of Intelligence Scale. The ITIS is an 8-item survey measured on a 6-point Likert-type scale ranging from 1 (agree strongly) to 6 (disagree strongly). The complete survey contains four incremental and four entity-theory items and assesses general beliefs about intelligence. The four incremental scale items are reverse scored, and all eight items are summed,

with higher scores indicating greater endorsement of entity beliefs about intelligence. This instrument is designed to measure key motivational variables, including implicit theories of intelligence, goal orientation, beliefs about effort, and strategies in response to failure.

The AR team deliberated at length and considered the literature in selecting the 8-item ITIS over other instruments such as the 3-item ITIS (Dweck, Chiu, & Hong, 1995), the 16-item Dweck Mindset Instrument (DMI; Dweck, 1999), and the 14-item revised Implicit Theory of Intelligence Scale (ITIS-R; Abd-El-Fattah & Yates, 2007). The 8-item ITIS includes four questions tied directly to entity theory, which relates to fixed mindset, and four questions tied to incremental theory, which relates to the concept of growth mindset. The 3-item ITIS, though as valid as the 8-item scale, may lead to a low level of internal reliability of measure because, psychometrically, the internal reliability of a measure is positively related to the number of items in the measure (Dweck et al., 1995). In addition, the three items are (a) “You have a certain amount of intelligence and you really can't do much to change it”; (b) “Your intelligence is something about you that you can't change very much”; and (c) “You can learn new things, but you can't really change your basic intelligence.” These questions all pertain to whether the participant holds an entity belief, but they are not balanced with questions that affirm an incremental belief as with the 8-item scale. The DMI has been used primarily in studies in which mindset is the only factor being researched (McDonald, 2017; Peltier & Scovotti, 2010; P'Pool, 2012). In this study, the AR team also considered grit as a factor. The DMI was therefore removed from consideration. The ITIS-R combines the traditional 8-item ITIS with Faria and Fontaine's (1997) Personal Conception of Intelligence Scale (PCIS). Though the PCIS has gained popularity since its validation, it has not been extensively tested.

Dweck (1999) developed the ITIS to measure the implicit theory of intelligence among participants. According to Hong, Chiu, Dweck, Lin, and Wan (1999) the ITIS showed a high internal consistency reliability with an alpha ranging from .94 to .98 for sample sizes ranging from 32 to 184 participants. Other studies (Caridad Garcia-Cepero & McCoach, 2009; Jones, Bryant, Snyder, & Malone, 2012) using this scale with sample sizes of a minimum of 33 participants showed reliability coefficients of above 0.82. The scale is also said to be unaffected by various potentially confounding variables, such as social desirability, intellectual ability, and self-presentation concerns, which support the validity of the scale (De Castella & Byrne, 2015). The scale has also demonstrated good construct validity, with scores predicting theoretically meaningful relationships with a range of variables, and, overall, research has indicated that the scale displays good internal consistency and test-retest reliabilities with coefficients between .81 and .85 (Hong, Chiu, Dweck, Lin, & Wan, 1999).

Despite the scale's frequent use, validity evidence for ITIS scores is limited. Most early validity evidence was reported in unpublished theses or secondarily cited in other work. A recent study of health professionals was recently conducted for the purpose of validating relevant instruments to measure motivation, mindset, and cognitive load (Cook, Castillo, Gas, & Artino, 2017). The 8-item ITIS was one of the three instruments evaluated. This validity study evaluated the internal structure using reliability and factor analysis, as well as relationships with other variables using the multitrait-multimethod matrix. During a half-day medical simulation activity for secondary school students, the ITIS was administered to 232 students "as part of an ongoing effort to promote interest in medicine among local young people" (Cook et al., 2017, p. 1064). The researchers estimated internal consistency reliability using Cronbach's alpha and evaluated internal structure validity evidence by examining reliability and factor structure.

The Cronbach's alpha was considered reliable and acceptable, with an alpha of between .78 and .79. This is slightly lower than the alpha ranges in previous studies but still considered reliable because it is greater than .70. According to the good-fit threshold (Hu, Bentler, & Kano, 1992) for confirmatory factor analysis, the ITIS overall seemed to be a valid construct. This model suggests that a standardized root mean square residual (SRMR) of ≤ 0.08 is valid, and the ITIS was 0.078. This model suggests that Bentler's comparative fit index (CFI) of ≥ 0.95 is valid, and the ITIS was 0.95. Finally, this model suggests that the goodness of fit index (GFI) should be close to 1.0, and the ITIS was 0.94. Based on these factors, the AR team determined that this would be the best instrument for this study.

Grit-S selection. The AR team had fewer choices for measuring grit, since the concept of grit does not have the longevity of the implicit theory of intelligence and has not been studied as extensively. The AR team looked exclusively at the Original Grit Scale (Grit-O) and the Grit Short Scale (Grit-S). The Grit-S is an adapted, shorter version of Duckworth's (2007) Grit-O, which is a 12-item measure of grit. This questionnaire is designed to measure perseverance in reaching goals and the consistency of one's interests over time. The 8-item Grit-S is thought to be both shorter and psychometrically stronger than the 12-item Grit-O (Duckworth & Quinn, 2009).

Duckworth and Quinn (2009) used six distinct studies to validate a more efficient measure of grit. Over the course of the six studies, they identified that the items for the Grit-S had the best overall predictive validity across the four samples originally presented in Duckworth's (2007) original scale. The studies used confirmatory factor analysis, which supported a two-factor structure of Grit-S in which "consistency of interest" and "perseverance of effort" were both evaluated as factors for grit. Both factors showed adequate internal consistency and were strongly inter-correlated, $r = .59, p < .001$. They validated an informant

version of the Grit, established consensual reliability, and measured test and retest stability of the Grit-S. In the study that was most related to the PTS population in the current study, a cross-sectional online study was conducted with three objectives: (a) confirm the factor structure of the Grit-S in a large sample, (b) identify its relations with the Big Five personality dimensions, and (c) establish its predictive validity for career changes and educational attainment. There were 1,554 participants who were at least 25 years of age; the population had an average age of 46, and 81% were female.

Grit-S scores did not differ significantly by gender but were significantly associated with age. Older adults reported higher levels of grit, which suggests that grit may increase with life experience. The chi-square for this model was 223.13 ($df = 54$, combined $N = 1,554$, $p < .001$). The difference in chi-square values between the gender-invariant model and the baseline second-order model, $\chi^2(38, \text{combined } N = 1,554) = 201.00$, $p < .001$, which was 22.13 for 16 df , was not significant, $p = .14$. The “perseverance of effort factor,” the “consistency of interest factor,” and the Grit-S as a whole showed internal consistency, $\alpha s = .70, .77$, and $.82$, respectively.

While Grit-S scores did not differ significantly by gender, but they were significantly associated with age, $r = .19$, $p < .001$. Older adults reported higher levels of grit, suggesting that grit may increase with life experience. This finding was consistent with evidence that interests stabilize over time as do traits associated with psychological maturity (Roberts, Walton, & Viechtbauer, 2006). As predicted, Grit-S was inversely related to the number of lifetime career changes individuals had made even when controlling for age and conscientiousness. These results were consistent with studies conducted with the Grit-O scale with similar populations (Duckworth et al., 2007).

Overall, Duckworth and Quinn's (2009) findings presented evidence that the Grit-S is a more efficient measure of grit. In confirmatory factor analyses, the Grit-S fit the data better than did the Grit-O. Moreover, the reduction of items from the Grit-O to the Grit-S does not come at the expense of predictive validity. Given its superior psychometric properties, comparable predictive validity, and fewer items relative to the Grit-O, the Grit-S is an economical measure of perseverance and passion for long-term goals (Duckworth & Quinn, 2009). Since being validated in 2007, the Grit-S was found to contain many of the same properties as the longer 12-item Grit Scale, as it is highly correlated with conscientiousness, contains factors relating to perseverance of effort and consistency of interest, predicted educational attainment, and was inversely correlated with number of career changes. It has been used and further confirmed in multiple studies (Coates, 2018; Duckworth & Gross, 2014; Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Reed, 2014; Smith, 2018), and it has been translated and validated in other countries and languages (Arco-Tirado, Fernandez-Martin, & Hoyle, 2018). It has consistently been a reliable predictor of success irrespective of the factor being studied. Thus, the credibility of the Grit-S made the decision to use this scale an easy one.

GPA, progression, and retention (post-enrollment). After the first semester of enrollment, end-of-semester GPA, number of academic hours taken, and semester-to-semester retention were collected for all PTSs who participated in the study. The data for students admitted in fall 2018 and spring 2019 were collected separately. The GPA, total number of academic hours taken, and retention of those admitted through the traditional admissions process were aggregated then compared to those admitted via appeal.

Qualitative Data

There were multiple forms of qualitative data collected and analyzed for this study. The sources of these data are described in the following sections.

Documents. During this study, multiple documents were collected from the PTSs who appealed their admission decisions. All students denied admission based on previous GPA or test results have the option of appealing the admissions decision. If the student chooses to appeal, the student goes to the Lakeland University admissions website and either completes the admissions appeals form online and attaches additional documents, or downloads the appeals form (see Appendix D) and submits the completed form, along with any supporting documents, via email, fax, or physical mail to the Lakeland University Admissions Department. Once the information is received by the admissions office, the appeal is added to the student's file, and copies of the student's file are made and placed in folders for the appeals committee to review. As a result of this study, the admissions appeals form and the accompanying documents were modified (see Appendix E). Previously, each PTS admitted via the admissions appeals process was required to submit an essay to the Appeals Committee to support their appeal. They were required to answer two questions (see Figure 6). Both questions were to be answered in 750 words or less.

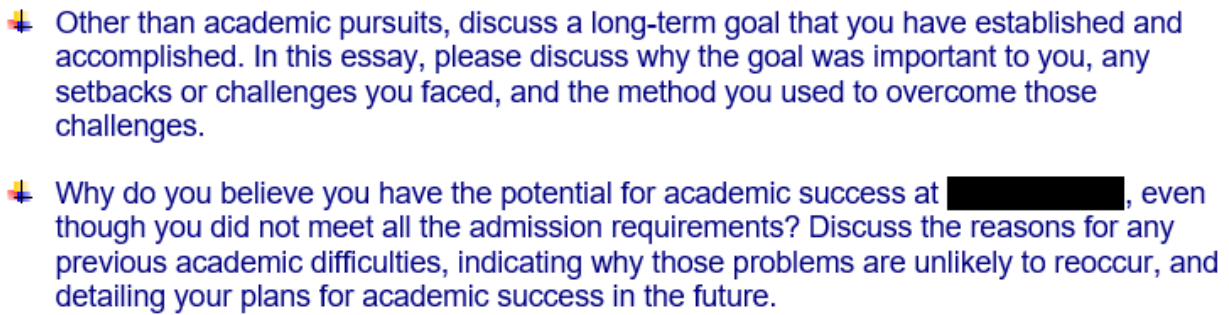
- 
- ✚ Other than academic pursuits, discuss a long-term goal that you have established and accomplished. In this essay, please discuss why the goal was important to you, any setbacks or challenges you faced, and the method you used to overcome those challenges.
 - ✚ Why do you believe you have the potential for academic success at [REDACTED], even though you did not meet all the admission requirements? Discuss the reasons for any previous academic difficulties, indicating why those problems are unlikely to reoccur, and detailing your plans for academic success in the future.

Figure 6. The required questions on the modified Lakeland University admissions appeals form.

The entire form is shown in Appendix E.

Now, a student who appeals is asked to write about their conception of growth mindset and grit, and are asked to share artifacts as a demonstration of both. The documentation collected for this study comprised the PTS personal essay, evidence of other accomplishments (i.e. resume, certificates earned, licenses held, etc.), and the admission recommendation form from the Appeals Committee chair.

In addition, each team meeting had a formal agenda, and minutes from the meetings were taken. A follow-up meeting recap summarizing what was discussed and outlining next steps was emailed to each of the team members. Oftentimes, these recap emails produced further informal dialogue, raised additional questions, and required the inclusion of other stakeholders in the decision-making process. The AR team meetings often led to formal or informal meetings with other stakeholders for the purpose of establishing more clarity, garnering additional information, or gaining buy-in. Meeting notes and email communication between team members and other stakeholders regarding this study were collected to provide additional context regarding concerns that were raised, thought processes, and how decisions were made. The collection of these data

sources was central to understanding the progression and procedure required to reach consensus or compromise.

Observation. I attempted to observe and take notes throughout the AR process. I observed individual team members during formal meetings and when we engaged in informal dialogue about this study. I observed dispositions as well as nonverbal and other observable artifacts that transpired throughout this process. As a participatory researcher, I took notes regarding what I observed about self and others throughout this change effort, and I kept an electronic folder of post-interaction observations. Throughout my observations, I sought to identify specific mindsets, thoughts, ideals, and insights regarding the proposed change in the admissions process.

End-of-project interview. At the end of the study, each team member participated in a semi-structured interview that took approximately 20 minutes to complete (see Appendix A). The purpose of this interview was to gain information about team members' individual experiences participating in the study. The goal was to collect each team member's authentic reflections. The questions were designed to illicit responses elucidating collective learning about the process of change at Lakeland University, as well as to provide a framework from which other organizations could benefit in the future.

Data Analysis Procedures

This section details the data analysis process and procedures that were implemented to address the research questions. Table 5 summarizes the methods used to analyze the quantitative and qualitative data collected.

Table 5

Data Collection and Analysis

Data Type	Data to be collected	Analysis Strategy
Quantitative	Post-Traditional Student Questionnaire	Regression analysis
	End-of-semester GPA	Regression analysis
	Semester-to-semester retention	T-test analysis
Qualitative	Admission appeal essays	Narrative analysis
	End-of-project interview	Thematic analysis

Data Analysis for Research Question 1

In order to answer Research Question 1—“What can be learned from considering mindset and grit as factors related to the academic success of PTSs at a public four-year university?”—the AR team analyzed the data collected using both qualitative and quantitative methods. This mixed-methods approach offered multiple ways to measure and access learning impact. The quantitative data collected were analyzed using regression analysis, while we analyzed the qualitative data using narrative analysis.

Quantitative analysis. The Post-Traditional Student Questionnaire was used to provide a comprehensive view of participants’ mindset (i.e., learning-goal orientation) and grit (i.e., perseverance and passion toward long-term goals). As a measure of determining success, the end-of-semester GPA and semester-to-semester retention for the PTSs who were admitted through the traditional admissions process and those admitted through the appeals process were analyzed separately and then compared. In addition, AR team members compared the end-of-semester GPA and semester-to-semester retention of all PTSs admitted with a high level of grit

and more of a growth mindset, regardless of how they were admitted, to those admitted with low levels of grit and more of a fixed mindset.

A regression analysis was run to determine the relationship between GPA, mindset, and grit score. The data were compared between students admitted through the regular admissions process and students admitted through the appeals process, and Group 1 and Group 2 were compared. After regressions were run, the analysis showed homoscedasticity using White's test for heteroscedasticity and the Breusch-Pagan test for heteroscedasticity (Lyon & Tsai, 1996). Both tests indicated that the residuals were distributed evenly throughout the data and that transformation was not necessary; that is, the errors between the observed and predicted values were normally distributed. One outlier was removed from the Group 1 dataset because that individual showed results that were not consistent with the rest of the participants. This was done to avoid unduly skewing the data (Sharma, 2018). T-test analysis was used to determine if there was a significant difference between the means of the students admitted traditionally and those admitted through the appeals process. Insights and knowledge acquired from these methods are detailed in Chapter 3.

Qualitative analysis. Each appeals essay was analyzed using narrative analysis to attempt to capture “the big picture” regarding participants’ experiences or events as they understood them. Narrative analysis focuses on the story itself and seeks to preserve the integrity of personal biographies or a series of events that cannot adequately be understood in terms of their discrete elements (Riessman, 2000). The coding for a narrative analysis is typically done for the narrative as a whole, rather than for the different elements within the narrative. The coding strategy revolves around reading the stories and classifying them into general patterns (Bamberg, 2012).

In this analysis, I focused on how the PTSs shared their life experiences and made sense of events and actions in which they participated. I sought themes, patterns, and relationships that helped to explain why students were admitted despite not meeting established criteria. I identified words and phrases that were associated with expressions of certain thoughts or emotions and any other similarities in the writing. I also captured other factors that might be significant such as stated reasons for past failures, the time that had elapsed since an academic failure, and professional experience. The categories were developed to highlight elements that were present in most essays, and I attempted to use noteworthy quotations from the documents in order to highlight major themes within findings and possible contradictions.

The qualitative data collected from the admissions appeals process were analyzed as individual narratives and juxtaposed with other findings. This information was used as additional qualitative data to support the other data derived from the questionnaire and the overall project findings. The data analysis process around the admissions appeals information consisted of examining, categorizing, and searching for patterns in the data for the ultimate purpose of making meaning. The information was analyzed using an inductive process in which abstractions, concepts, and hypotheses were drawn from the data for the purpose of helping to reveal relevant themes (Ruona, 2005). Throughout this procedure, I continuously sought to make meaning. This meaning making involved perceiving patterns from seemingly random information while seeking *codable* moments to sense themes that emerged from the data (Ruona, 2005).

Data Analysis for Research Question 2

In order to answer Research Question 2—“What can be learned about using alternative metrics in the admissions process for PTSs at a public four-year university?”—I used thematic

analysis. The aim was to tell the story of what was required to produce change (Coghlan & Brannick, 2014). I carefully coded and transcribed the information obtained through interviews with the AR team for the purpose of providing an accurate and reflective account and critique of issues, processes, interpretations, biases, assumptions, concerns, and judgments made. I reviewed the feedback received from the AR team to glean other significant insights and interpretive categories for analysis, and to prevent the skewing of perceptions by analysis from multiple viewpoints (Stringer, 2014). The nature of the research embodied a multiplicity of views, commentaries, and critiques, leading to multiple possible actions and interpretations.

The data collected were analyzed through the identification of themes and interpretation. As previously mentioned, when using the qualitative data-analysis process to answer Research Question 1, I looked for common themes woven throughout the end-of-project interviews. I looked for word repetitions, which could point to salient themes, metaphors or analogies, connectors, or commonalities in discussions (Ryan & Bernard, 2005). This data analysis process was driven by categorizing and coding to interpret meaning (Ruona, 2005). The goal was to find themes linking a number of different ideas and concepts as I offered my own perspectives on what the data were suggesting.

Given the focus of the study, a multi-step thematic analysis (Braun, Clarke, & Terry, Hayfield, 2017) seemed to be an ideal analytical method. During the analysis, it was important to read and re-read the emails, meeting notes, memos from observation, and the interview transcripts after the interviews were completed. I utilized NVivo for the analysis of the qualitative data collected. NVivo aided with:

- attaching keywords or tags to segments of text;
- keeping text in an organized database;

- locating relevant segments of texts;
- connecting relevant data segments to each other;
- forming categories, clusters, or networks of information;
- counting frequencies, sequences, or locations of words and phrases;
- placing selected or reduced data in a condensed organized format;
- aiding in interpreting displayed data; and,
- developing systematic, conceptually coherent explanations of findings.

I grouped like codes into larger themes by identifying larger patterns in the interview transcripts before reviewing and revising themes. As final steps, the process involved engaging in detailed analysis of the data in each theme to refine categories that established their significance and contextualizes them in terms of existing theory and research (Braun et al., 2017).

Additionally, I used observation and reflection to provide more depth to the analysis around Research Question 2. While I did not have the benefit of recorded AR team meetings, I did take notes and create memos throughout this project. I used these documents, my general observations, and reflections to share personal insights believed to impact this study.

Ensuring Trustworthiness and Validity

Action research requires a significant investment when engaging with the data, the study participants, and the AR team. Patton (2002) described this investment best: “The researcher is the instrument” (p. 14). The following sections describe the strategies employed to ensure trustworthiness and validity for the study.

Trustworthiness

Watkins (1991) highlighted the necessity of credibility, applicability, dependability, and confirmability for demonstrating trustworthiness. Herr and Andersen (2015) added that

credibility is achieved through multiple methods, including triangulation, peer debriefing, and member checking. Applicability pertains simply the extent to which a study is portable enough to be replicated (Watkins, 1991), so providing a detailed and accurate depiction of events, situations, conversations, and key moments, using an audit trail, was vital in this study. Dependability was ensured by having the AR team and my major professors examine the data collected and review how the data were analyzed. Interpretations and conclusions were examined to verify that they were supported by the data itself. Because AR presupposes that each researcher brings a unique perspective to the study, confirmability refers to the degree to which the results could be confirmed or corroborated by others (Stringer, 2008). Stringer (2008) documented a number of strategies for enhancing confirmability. Documenting procedures, checking and rechecking the data throughout the study, validating with other stakeholders, and acknowledging subjectivity were strategies that Stringer championed and that were employed in this study. Table 6 shows the strategies used to demonstrate trustworthiness.

Table 6

Strategies for Achieving Trustworthiness

Strategy	Credibility	Applicability	Dependability	Confirmability
Triangulation	X		X	X
Peer Debriefing	X			X
Member Checks	X			X
Audit Trail	X	X	X	X
Thick Description	X	X	X	X
Subjectivity Statement				X

Triangulation. Triangulation is the use of multiple data sources to support developed themes. In this study, triangulation was accomplished through the collection of the admissions appeals data, the use of persistent observation and memoing, debriefing, recapping, transcribing, notetaking, collaborative inquiry, interviewing, and collection of feedback.

Peer debriefing. Peer debriefing requires the researcher to work with stakeholders and impartial peers to enhance credibility. Data collected and information gathered in this study were not only reviewed by the AR team and my major professors, but I also hired a research firm to assist with document review, the regression analysis, and thematic data analysis. My AR team, my major professors, and the external agency all provided unique feedback that added value to the assurance of trustworthiness.

Member checking. Member checking, or respondent validation, is the solicitation of feedback on the data analysis from those being studied (Maxwell, 2013). This assists in avoiding misinterpretation and addresses researcher bias (Merriam, 2009). After each project interview concluded and the interview was transcribed, I shared the transcription and my thematic analysis with each member of the AR team for the purpose of ensuring accuracy and inviting feedback.

Audit trail. To develop an audit trail, researchers “maintain a log of all research activities, develop memos, maintain research journals, and document all data collection and analysis procedures throughout the study” (Carcary, 2009, p. 15). I logged emails, meeting minutes, memos, and all forms of data by date, and often by time, to ensure I had an accurate record of what happened and the sequence in which it happened.

Thick description. Coghlan and Brannick (2014) defined rigorous reflection as making sense of what happened, or making tacit knowledge explicit. As the AR team moved through this study, I established an expectation of beginning each meeting with a recap of the last meeting,

including discussion topics, action items, who was responsible for what, progress made, and items outstanding. We continuously evaluated our progress and shared our challenges and successes. This practice of record keeping allowed for the creation of thick description in the telling of the story, and also added to the trustworthiness and validity of the research.

Subjectivity statement. As Creswell (2014) stated, “Good qualitative research contains comments by the researchers about how their interpretation of the findings is shaped by their background” (p. 202). As the insider-researcher, I did this by including a subjectivity statement in this chapter in which I reflect on how my perspective, behaviors, beliefs, biases, and values might have influenced the study.

Validity

Validity in action research is the value or worth appropriate for defining the nature of the relationships to be studied (Watkins, 1991). Hammersley (1992) added, “An account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain, or theorize” (p. 69). Feldman (2007) argued that the results of action research, because of the potential moral and political implications they may carry, should be questioned on the grounds of validity. He suggested further principles to help action researchers ensure validity, including the following: (1) AR reports should include clear and detailed descriptions of how and why data were collected; (2) action researchers must provide clear and detailed descriptions of how their narratives were constructed from the data; (3) action researchers should strive to collect data from numerous sources to combine multiple perspectives; and (4) action researchers should be able to provide an explanation of why they believe that the intervention they took led to the results.

Herr and Anderson (2015) recommended considering four validity criteria when evaluating the AR research process: dialogic and process validity, outcome validity, catalytic validity, and democratic validity. Table 7 outlines the validity criteria, their descriptions, and the actions I took as the primary researcher to enhance and ensure trustworthiness. The quality and rigor of this study connected the findings to the development or expansion of theory and usable knowledge (Herr & Anderson, 2015).

Table 7

Methods to Ensure Action Research Validity

Herr & Anderson's (2015) Validity Criteria	Herr & Anderson's (2015) Description of Validity Criteria	Actions Taken to Ensure Validity by Researcher
Dialogic and process validity	• Generation of new knowledge • A sound and appropriate research methodology	• Use of the AR cycle as a guide for learning and reflection • Collection of memos, notes, documents, and other records of the decision-making process • End-of-project interview feedback from AR team
Outcome validity	• Achievement of action-oriented outcomes	• Development of research questions that have measureable and generalizable outcomes • Use of multiple methods of data collection and analysis that allowed results to be triangulated
Catalytic validity	• Education of both researcher and participants	• Consistent meetings, dialogue and conversations with the AR team to reinforce the problem and the team's role in co-constructing solutions
Democratic validity	• Results that are relevant to the local setting	• Collectively reviewed outcomes with AR team at specified periods throughout the AR project for the purpose of evaluating the actions and making collective interventions when appropriate

Subjectivity Statement

I am an African-American man who was raised by my grandparents, who were both born during the First World War. They were raised during the second industrial revolution and had limited educational opportunities. They created a life for themselves, their children, and ultimately their grandchildren by working blue-collar jobs. Because of their limited opportunities, they held educational success in the highest regard and valued going to college and earning a degree as an essential indicator of success. Growing up in their household, the only question I had about college was which one I would attend, not if I was going to attend.

I was groomed to take the traditional route to college. I was afforded tutoring when needed to help me maintain the honor roll. My grandparents paid for me to take multiple SAT preparation courses when I scored miserably on my first attempt. My high school counselors flooded me with information, so I knew exactly what grades and scores I needed to get into each college to which I applied. In addition, it seemed as if every day I learned about a new scholarship being offered to high school students with a profile like mine. To say I was privileged is an understatement.

I graduated from high school and moved over 800 miles away to attend one of the premier historically black colleges in the United States. While there, I encountered many other students who were much more privileged than I was. They came from more affluent backgrounds, had even more support growing up, earned better grades, and received more scholarships and financial aid. However, several of them dropped out due to the college's academic rigor, loss of focus brought on by their newfound freedom, homesickness, or myriad other reasons. Witnessing what I internalized as failure on the part of these individuals actually

motivated me to work even harder to succeed in college. I did not take my privilege for granted and was motivated to achieve what my grandparents could not.

I graduated from college in four years and serendipitously landed an entry-level admissions job at a private for-profit university where I worked for about six years. This university was part of a corporation that was publicly traded on the New York Stock Exchange. The university posed as an institution of higher learning, but its real focus was making enough money to satisfy shareholders. The requirements for entry into this university were a high school diploma or GED and the ability to borrow enough money to cover tuition, which was about five to seven times higher than local public universities, and more than double the cost of credible non-profit private schools in the area.

My job was to convince people who did not have a favorable high-school GPA or good test scores to come to the school to get an inferior education and pay a premium price because the bar for entry was low. A very large percentage of the applicants I engaged with were post-traditional students. I had many conversations with those who had experienced challenges in high school that were out of their control and that limited their opportunities. I also had conversations with those who had some of the same privileges I had growing up, but who had made bad choices that prevented them from taking the traditional route to college. Now, years later, they were still bound to the consequences of decisions they had made as children. Such PTSSs, with few options, became the target audience for the university. I was not in any position of influence at this university, but because my livelihood depended on it, I was a complicit member of what I recognized as a predatory system.

I was fortunate to have the opportunity to secure a middle-management position in the admissions department at a credible private nonprofit university. In this role, I went on to earn a

master's degree while working at the university, which afforded me the opportunity to be promoted to several leadership roles in both private and public nonprofit higher education institutions. I have been responsible for the recruitment and enrollment of all types of students and have also had the opportunity to teach as an adjunct instructor. When I moved from the nonprofit to the for-profit higher education arena, I was surprised to learn how disadvantaged the PTSs were in this system as well. I have witnessed applicants who had served in key leadership positions at Fortune 500 companies be denied admission to an undergraduate degree program because of grades earned over 15 years earlier and because of failure to achieve a certain score on a standardized exam. There were many intelligent, capable, and motivated applicants—like some of the students I attended undergraduate with—who had made adverse decisions at a young age and, as a result, were not admitted to the university.

I had a friend who applied for admission at a private institution but was denied admission based on the GPA she had earned over 20 years prior. Since the time of her first attempt to earn an undergraduate degree, she had become a minister and was a federal employee. She successfully appealed her admissions denial and was ultimately granted admission. She earned her bachelor's degree from that institution and graduated with honors. She then went on to earn her master's degree and is now, at the time of this writing, about one year away from earning her doctoral degree.

I once recruited an executive-level professional, who worked for a well-known company in the financial industry and who did not have a bachelor's degree, for an undergraduate degree program in business. After evaluating his high school and college transcripts and seeing his Compass test scores, I had to deny his admission because he did not meet the admissions requirements. I advised him to appeal the admission decision but because of pride he declined to

do so. Instead, he applied to an executive master of business administration (EMBA) program at the same school. A little known fact is that certain graduate degree disciplines do not require an undergraduate degree as a prerequisite. The EMBA was one of those degrees, and he was admitted to the program. He has since earned his master's degree in business even though he does not have an undergraduate degree.

My privilege, the privilege of others whom I know, and the disadvantages I have witnessed and experienced, particularly among PTSs, has severely jaded my view of current undergraduate admissions for PTSs. My past and current roles and experiences have shaped my biases, namely my assumption that there should be alternative metrics and measures for making admissions decisions for PTSs. When I decided to pursue a doctoral degree, I did so because I wanted to advance to higher levels of leadership in higher education but also because I wanted to impact change. I applied to this doctoral program at the University of Georgia because I felt it would help me develop into a more effective leader and because the institution's prestige would help my career advancement. At that time, I had no idea that this program required me to engage in action research or even what AR was.

Through my doctoral program, I have gained an informed appreciation of AR and its emphasis on collaborative processes and learning, and reflection on results. However, even after nearly three years in the program, I am still more interested in the results of the change process than the process for creating the change. I have had to be continually reminded by my major professors to appreciate the change process and to not fixate on the change itself. I have had to keep in check my overarching hope that this study points to the need for the development of an alternative evaluative tool for PTS admission (because the existing tools examined in this study

are not sufficient) and not let this passionate focus overshadow the proper and effective implementation of the AR process.

I am cognizant that I am personally invested in the outcomes of this study. In order to manage my biases and strengthen the validity of the research, I leaned heavily on my AR team and my major professors throughout this process. They offered feedback on the data-collection process, reviewed the raw data, questioned the data-analysis process, and vetted assumptions I made. Though I want ultimately for this study to be a vehicle for change, I wanted even more to conduct the research with the utmost integrity.

Conclusion

This chapter provided background on AR as a methodological approach to engaging systems, exploring this problem, and learning from this process. For this study, AR served as the most appropriate and effective approach to evaluating alternatives and co-creating possible solutions. This chapter described the research plan for the study, established the framework, and described the steps taken to ensure trustworthiness and validity. Chapter 3 details the context of the AR study and how the AR project evolved at Lakeland University.

CHAPTER 3

THE ACTION RESEARCH STORY

In this chapter, I tell the story of how this study emerged and became an AR project. I describe the context of the study, the evolution of the project, and the associated outcomes. Regarding the context, I provide an overview of the organization where the study was conducted, the presenting problem, the need for this inquiry, and the purpose of the study. In discussing the evolution of the project, I describe the formation and work of the AR team, the specific AR process adopted, the decision-making process, and the overall development and complexity of the study. Finally, I highlight the outcomes of the study, including how I used the AR process to answer the research questions.

Context of the Study

Lakeland University is what Laloux (2014) described as a mostly “amber organization,” an organization characterized by clear roles and ranks within a hierarchical structure. Leadership is exercised through control, and compliance is expected throughout the organization. Stability and order are enforced through rules and policy that allow little room for innovation. Lakeland University is one of over 20 institutions governed by the State Board, and the established regulatory admissions policies mandated by the SB allow for little flexibility. The SB has served as the regulatory board for member institutions since the early 1900s; thus, its breadth and power span more than a century.

Within the last decade, several longstanding SB member institutions have experienced consolidations because of declining enrollment, institutional mismanagement (in some capacity),

or other metrics that could point to institutional ineffectiveness, such as declining graduations rates. The SB orchestrated the merger of institutions that it deemed ineffective with those deemed more effective. These consolidations functioned more like acquisitions, whereby many of the positions at the institution believed to be ineffective were eliminated or those who served in duplicative roles were demoted. Internally, for the last few years, the Lakeland administration has been extremely concerned about being consolidated because of declining enrollment. Therefore, at the time of this study, the senior administration's appetite for ideas about increasing enrollment was extremely strong.

In my role as the executive director of recruitment and admissions, it was my responsibility to monitor enrollment trends, review practices, and evaluate processes. In this capacity, I observed that the PTS applicant pool was significantly lower than other student types. While the conversion rate from applicant to enrollment was on par with other populations, this smaller beginning population meant that fewer PTSs ultimately enrolled. When I realized that this was a persistent trend, I began to look closer at this student population—an inquiry that became the genesis of this study.

During this process, I reflected back on a similar issue I faced with the traditional freshman population. I discovered that, since 2011, Lakeland had denied almost 50% of its traditional freshman applicants because they did not meet the entrance exam requirements. In response to this finding, using the university's limited admission policy, I launched a summer bridge program in 2016 that admitted students who showed a propensity for college success, as evidenced by their grades in high school, but did not meet the established admissions requirement in either the English or the math portions of the ACT or SAT. The students admitted into this program met all of the admissions criteria, except in one content test area. These

students were admitted into a five-week lockstep cohort where they were required to take two predetermined classes in the summer and to receive tutoring in the test area in which they did not meet the admissions requirement. The two predetermined classes were college introductory classes selected because they were required for each student regardless of major and were identified by faculty as classes that could offer evidence of collegiate success. That is, typically, traditional freshmen who earn a grade of “C” or higher in these courses complete their freshman year with a GPA of 2.5 or higher.

In the inaugural year of the summer bridge program, 40 students were enrolled, and all of the students passed the two predetermined courses with a grade of “C” or better. Ninety-two percent of the students returned to school the following fall semester, and by the end of their freshman year, the students admitted via the bridge program collectively had higher GPAs than those admitted according to the traditional admissions criteria. To date, these students have been retained at a rate of 76%, which is the highest retention rate of any student population at Lakeland. After its launch, the college deans, the provost, the president, and other leaders on campus deemed the program a success because of the additional revenue this cohort generated, their collective academic GPAs, and the high numbers of students retained. In 2017, the program was expanded to include just under 80 students. Though the GPA and retention of these students was slightly lower than the first cohort, they were still significantly higher than any other student segment at Lakeland University.

Similarly, the institution wished to increase the number of transfer students admitted since the transfer student population had decreased by more than 25% since 2010. It is speculated that the primary reason for this decline was that the U.S. economy rebounded significantly during this time, resulting in the creation of more jobs; in turn, potential transfer

students were choosing to work rather than return to school. Another hypothesized reason for the decline was simply the increasing number of options for transfer students, specifically online colleges, which were perceived as a more convenient option for students. While applications for admission were decreasing, the percentage of students admitted were remaining constant, which led to an overall decrease in enrollment. In an effort to grow this population, the university's enrollment management division looked for allowances by the SB.

As with traditional students, the SB has a limited admission policy for transfer students. This led to Lakeland's creation of a program that allowed for the admission of students whose GPA fell slightly below the established transfer requirement. The cumulative GPA required for admission as a transfer students is 2.0; however, this program would grant admission to a transfer student with a transfer GPA of 1.75 to 1.99 if the students attended three or fewer institutions prior to the term in which the student applied. Prior to the establishment of this program, the only option for a student with a GPA in this range was to appeal the admissions decision. The decision to establish this program was based on a review of Lakeland University's transfer student data over a 10-year period. The data showed that the transfer students who enrolled at Lakeland with a transfer GPA from 1.75 to 1.99 (via appeal) and had attended three or fewer institutions prior to enrollment had nearly an identical graduation rate as those who entered with a transfer GPA of 2.0 to 2.5. Additionally, the success of the summer bridge program for traditional students provided a comfort level for the university leadership to be able to support and retain "lower performing" transfer students. This program began in 2017 with the enrollment of 50 students who would have ordinarily been denied.

The SB already had specific allowances in place for the admission of traditional freshman students and for transfer students, but there were no similar special allowances in SB policy for

post-traditional students. Currently, the only option a PTS who does not meet the admissions requirements has is to appeal the admissions decision. The admissions appeals process is governed by the Admissions Appeals Committee at Lakeland University. The committee is charged with reviewing all appeals and determining whether a denied student's appeal should be overturned. Typically appeals are overturned as a result of a special circumstance that the committee feels prevented the applicant from performing at their academic potential.

The Admissions Appeals Committee is a five- to seven-member taskforce made up of Lakeland University staff and faculty. Each committee member agrees to serve an initial two-year term. Every year after the first two-year commitment, the committee must be reaffirmed. Students who appeal their admissions decision must provide evidence that they did not meet the minimum admissions requirements because of special circumstances. Typically, circumstances for those who appeal include, but are not limited to, the death of a loved one, the student's hospitalization, or a traumatic event. While the committee works to gather as much information about the special circumstance as they can from the student in order to make an informed decision, the decisions made by the committee are highly subjective and often involve some element of bias for or against the applicant.

It was troubling to me that, within the confines of SB policy at this time, there was no precedence for a program that would allow a PTS who does not meet established admissions criteria to be admitted without going through the appeals process. Therefore, this AR project was designed to challenge this policy . As the lead initiator, developer, and data collector of and for the summer bridge program, I had a reputation for challenging norms and establishing new programs at Lakeland. However, in order to increase the credibility of this project and foster sustained change, I needed help that would be solution-oriented and credible.

The Action Research Team

When thinking about this problem, I immediately identified two individuals I wanted to invite to participate in this process. The first person I invited was an assistant professor of psychology at Lakeland University who, for the purposes of this study, I refer to as “Dr. Joe.” I asked Dr. Joe to be a part of the AR team because he was formerly a leader in the division of enrollment management and was, at the time of the study, researching factors that lead to college success. He was studying the impact that locus of control has on college persistence. His research interest and current work had the potential to benefit this study, and I was hopeful that the learning that would emerge through this process would benefit his research as well.

I also invited the university’s then director of continuing education—referred to here as “Dr. Kim”—to participate in this study as well. In her role, she led a team responsible for recruiting and enrolling students who are interested in obtaining additional education but are not degree-seeking. I asked Dr. Kim to join the team for two reasons. First, a significant portion of the students she serves as the director of continuing education are PTSS, some of whom may be students who had been denied admission as degree-seeking students at Lakeland University. I believed that her knowledge of educating this population of students would provide significant insight into factors contributing to their success as students. The second reason I invited Dr. Kim to participate was that she had recently earned her doctoral degree and had used AR as a method to complete her dissertation study. I believed that her knowledge of AR would serve as a valuable resource throughout this AR process.

I met individually with Dr. Joe and Dr. Kim. In these meetings, we discussed the purpose of this study, the AR process that we would engage in, our expectations of each other, the length of time we expected to engage in the process, and the learning we hoped to acquire. The

meetings went extremely well. Both individuals agreed immediately to participate in the process and communicated that they were eager to be a part of the AR team.

During our first two meetings, we further clarified our AR approach, clarified our roles, and determined that it was important to add another member to the team in order to expand our diversity of thought and ways of making meaning. We wanted to ensure that whomever we invited would add value and have a genuine interest in both the change process and the presenting problem that many PTSs face. Dr. Joe, Dr. Kim, and I began to engage regularly by email about selecting a good fit to join the team. After a series of lengthy discussions, Dr. Joe recommended that I invite Lakeland's then vice president of student affairs, whom I refer to here as "Dr. Mary." His recommendation was based on the fact that Dr. Mary's doctoral degree had focused specifically on nontraditional students or adult learners, and that he had a very good relationship with her. Dr. Kim agreed that Dr. Mary would make a great addition to the team. I immediately contacted Dr. Mary to schedule a face-to-face meeting with her.

Less than a week later, I met with Dr. Mary. During our meeting, I learned that Dr. Mary's doctoral degree was in adult education and that her research had examined how White adult educators challenge racism. She had conducted a qualitative study with anti-racist educators, both White and people of color, from various organizations across the United States who had worked for years to challenge racism. After learning about this project, I could tell she was excited that this project was designed to challenge what she had identified as an injustice for another marginalized group in higher education.

After this meeting, I, too, believed Dr. Mary would be an excellent addition to the AR team. The next day, I followed up with Dr. Mary via email and formally invited her to join the

team. In less than a week, she called me and formally accepted the invitation. I truly felt that the four of us would make a great team and that we were equipped to accomplish our mission.

The Unfolding of the Action Research Process

Action research was an important vehicle for producing change at Lakeland University for a number of reasons. In a higher education environment, where the vast majority of the senior leadership and decision makers have terminal degrees, using a method that is grounded in theory served as an ideal vehicle for effecting systemic change while generating knowledge (Zuber-Skerritt, Wood, & Dick, 2013). Though the vice president for enrollment management and the provost, who gave the final approval for this project, held doctoral degrees that had been earned through more traditional academic methods, they understood the constructs of the AR process, which made the acceptance of this methodology palatable. They appreciated the process of problem formulation and diagnosis, the inclusion of stakeholders, and the evaluative process, which could serve as a conduit for improving the process and experiences of PTSs at Lakeland. The decision to use collaborative inquiry methodology with other insiders as opposed to collaborative inquiry with outsiders, or reciprocal collaboration with insiders and outsiders, was also a key element in gaining buy-in and accelerating the change process.

My AR teammates had worked at Lakeland for an average of 14 years, so they had deep and thorough institutional and system knowledge. They were or had been seasoned leaders of entire departments, so they had experience being entrusted with leading change. Additionally, I was the only member of the team without a terminal degree; though never explicitly stated, I believe that teaming with insiders with doctoral degrees offered an additional layer of credibility at the university level. Including these influencers as part of the AR team was central to moving this process forward.

The AR team collaborated for just under 15 months. We had eight formal team meetings, but most of the collaboration was by email. Our first meeting occurred approximately six weeks after I successfully completed my comprehensive exams. As part of the process of preparing for my exams, I was required to clarify, briefly, the purpose of the study, the presenting problem, and the problem through the lens of the literature. I shared with the team a synopsis of my literature review, which expounded on the research of implicit theories of intelligence and grit. This provided the foundation for our first team meeting. Sharing this information created a tremendous amount of dialogue and synergy.

During this inaugural meeting, it was important to adequately and accurately frame the problem. In doing so, we engaged in constructing the central issues (Coghlan & Brannick, 2014). We discussed statistical data showing that, since 2015, approximately 40% of PTS applicants at Lakeland had been denied admission because of grades earned over 10 years previous, an additional 25% for grades earned over 15 years ago, and all others because of failure to pass the entrance exam. We reviewed the SB's admissions policy and discussed how the policy, which bases admissions decisions on GPA and standardized exams, privileges what is perceived to be the "known" and attaches little value to other possible predictors of future success. Then we reviewed the alternative admissions provisions, in lieu of submitting an appeal, which the SB allows for both traditional and transfer students. We agreed collectively that it appeared that a similar provision for PTSs was inequitable

We spent a significant amount of time discussing the presenting problem at Lakeland University and nationally. Since the university is governed by the SB, we carefully reviewed and examined the admissions policies for all students and the provisions the policy makes for certain categories of students (e.g., freshmen and transfer students). We discussed the historical data

regarding the PTSs admitted via the admissions appeals process to determine how many were still enrolled and how well they were performing academically. We also evaluated the admission status of all current PTSs who had applied for admission in an effort to determine how many prospective students were seeking admission. During this meeting, I also shared my preliminary review of the literature, and the team members seemed to be inspired and passionate about moving forward. We decided to reconvene to discuss what we had learned and potential next steps. In the meantime, Dr. Joe and Dr. Mary agreed to begin reviewing instruments that we could use to assess implicit intelligence and grit.

Planning Action: Key Discussions and Turning Points

Over the course of approximately three months, the AR team met four times while continuing to use email as our primary means of connection. During this time, we reviewed several instruments that Dr. Joe and Dr. Mary had found. We discussed the pros and cons of the 16-item, 8-item, and 3-item Implicit Theory of Intelligence Scales and the 12-item and 8-item Grit Scales. After a considerable amount of dialogue, we decided that the 8-item ITIS and the 8-item Grit-S would be the best instruments to employ in this study based on the amount of information that we deemed necessary to collect. As noted earlier, the 8-item ITIS includes four questions tied directly to entity theory, which relates to fixed mindset, and four questions tied to incremental theory, which related to a growth mindset. The 8-item Grit-S is thought to be both shorter and psychometrically stronger than the 12-item scale (Duckworth & Quinn, 2009).

During this time, we also decided that we would only collect data from newly admitted PTSs during the fall and spring semesters because the summer semester student population would be too small and could potentially skew the data. We also decided that we would evaluate each student's end-of-semester GPA and retention for their first semester only. We determined

that we would define success for these students by academic GPA compared to those admitted through the normal admissions process and post-semester reenrollment. Lastly, the team thought it was important to gain support for this project from the Admissions Appeals Committee. We agreed that I would give a presentation to the committee for the purpose of encouraging the committee to admit any denied nontraditional student who agreed to participate in the study during the fall 2018 and spring 2019 semesters. Our rationale was that if we were able to admit any PTSs who appealed, we would be ensured to have a large sample size from which to gather meaningful data.

A few weeks before my meeting with the Admissions Appeals Committee, we began to rethink our decision to attempt to influence the committee to admit unqualified PTSs for the purpose of participating in the study. We grew concerned that admitting students with no indication they would be successful could actually harm the student. We concluded that we could actually set up students for failure because they may enroll ill-prepared, with limited tools, and the study would have required that we not provide any additional support outside of what we would give students who qualified for admissions based on the current standards.

Over the course of a weekend, we grappled with determining the best course of action. We discussed three possible solutions:

- Possible Solution 1: Do not grant admission to all denied PTSs. Create a separate admissions appeals form for PTSs (via Qualtrics) and encourage students to appeal the admissions decision. The AR team would receive all of the appeals submitted and make admissions decisions based on all of the new information we had obtained from students. According to this solution, the AR team would effectively replace the appeals committee for PTS appeals.

- Possible Solution 2: Use only admitted students in the study. We discussed asking the students who were already admitted to complete the PTS Questionnaire and use the results of the assessments to establish a correlation between those with a growth or fixed mindset and those without. We would then use the results to make inferences about how those who had been denied would fare.
- Possible Solution 3: Include all the admitted students in the study as well as students who had been denied, appealed, and were then admitted by the current appeals committee. This approach would allow the AR team to evaluate grit and mindset of both populations, which we all agreed could produce significant findings. It would also make the study more refined in determining the impact of grit and mindset, since we would intermingle cognitive factors (meeting the standards) with non-cognitive factors.

While we spent much time considering the advantages and disadvantages of each possible solution, Dr. Joe expressed considerable support for Possible Solution 3. He stated, “This would take us out of the admission decision and avoid the possibility that others might think we might be looking for students who support the hypotheses.” He added, “I really think it would be a good idea for you to meet with the appeals committee to explain your study and solicit their support.” Likewise, Dr. Kim, Dr. Mary, and I became more and more convinced of the merit of Possible Solution 3. After a series of emails that coincided with a face-to-face meeting, we revised our original decision and formalized the following decisions:

- All denied PTSs for the fall 2018 and spring 2019 semester would have to elect to go through the appeals process and elect to take the PTS Questionnaire to be included in the study.

- I would lead the process of proposing modifications of the current admissions appeals form to include questions that reflect mindset and evidence of grit, including, but not be limited to, certificates, achievements, honors earned, and resumes.

In the brief time since the AR team had been formed, we had bonded rather well. We engaged in deep and substantive inquiry regarding the modification of the current admissions appeals form, which led to some spirited conversations. We were able to work through differences of opinions either during our team meetings or in conversations via email. We had all admitted to having some degree of bias and needing to be open and transparent enough to share them. At this point in the process, the dynamics of the team were collaborative and cohesive. We moved quickly into what Tuckman (1965) described as the norming phase, where the team developed a stronger commitment to the process, began to develop trust in each other, and immediately began taking ownership of the process of moving through the AR cycle.

Appealing to the Appeals Committee

After extensive collaboration with the AR team, I presented the proposed modifications to the Admissions Appeals Committee on behalf of the team. Specifically, I proposed a new appeals form and asked the committee to consider using a different lens in evaluating nontraditional student appeals for the fall and spring semesters. Committee members raised many questions and seemed fascinated with the study. For instance, they inquired about national data that spoke to biases against post-traditional students, and about the results of other studies of grit and mindset. They also asked about the success rate of students who had been admitted during the existing appeals process, and they wanted to understand exactly how success would be measured in this study.

After my 20-minute presentation and 20 minutes of answering questions related to the study, the committee agreed unanimously to adopt the new modified form, under the condition that it could be used to give every student who appeals a holistic review. Though I had not considered using the form universally, I agreed to their terms, and the new form was immediately adopted. Within the week, I requested that my admissions staff discard all old appeals forms and replace them with the updated version. I also replaced the old form on the website with the modified version.

The following month, I worked with my information systems specialist to build the PTS Questionnaire using Qualtrics, and generated a QR code so that the form could be accessed on a mobile device. I simultaneously worked with the New Student Orientation team on how this survey was to be distributed and how it would be communicated to student respondents. Within about three weeks, the Qualtrics form was built, tested, and ready for distribution. The orientation team was versed in how to present the survey and collect the data, and we were ready for the first fall 2018 orientation.

During this same time, I met with my major professors, and during this conversation, we agreed that, in addition to having a modified appeals form, there should be a rubric that clearly articulated how PSTs were evaluated. The thinking was that this would serve as an additional source of qualitative data to clarify the decision-making process. I researched some sample rubrics that could be used and emailed the proposal to the chair of the appeals committee. I thought that the rubric, like the modified appeals form, would be adopted quickly as well, but I was mistaken.

The chair disagreed that the rubric was necessary. In an email, she explained that an appeal is a holistic review of the student's file, one that considers all components of the previous

academic record as well as reasons why the student was not successful at a previous institution(s). She also shared that the committee is intentionally made up of faculty and staff representing different departments and areas of expertise in order to make the best decision for the student and the institution. In her opinion, a formal rubric would take away from the holistic approach because various components of the decision were weighted differently depending on the unique situation of every applicant for appeal. This was the first time I had received any resistance from the Admissions Appeals Committee.

I responded to her email with a request for a face-to face meeting. During this meeting, I explained that the rubric would serve as an objective standard for measuring admission for PTSs. I shared that admissions decisions would still be holistic; the rubric would simply be a means of making the process transparent and would emerge as an additional artifact for the study. I could clearly see that she still opposed the idea, but she agreed to allow me to come to another Admissions Appeals Committee meeting to present my notion of developing a standard rubric. I met with the committee again less than a week later.

I presented a simple rubric and explained how it could actually make the decision-making process easier for the committee members and easier for students to understand why they did or did not receive approval from the appeals committee. While I was presenting, I caught glimpses of the chair looking down with her arms folded. Her body language suggested that she still did not support the idea, but she did not say a word. Conversely, while I was presenting, I could see every other member of the committee nodding in agreement and, in some instances, even smiling slightly as I spoke. After my presentation, the collective sentiment of the committee was that the rubric was a great idea, and they supported its addition. One of the faculty members spoke up and said she liked the idea of a rubric (since she used rubrics for grading), but she asked if they

could collectively take some time to review my proposed rubric and send me some suggested modifications. I thought this was a good idea, and I left the meeting waiting for their feedback.

Within a week, I received feedback from the chair of the appeals committee, along with a suggested rubric. The rubric the committee members proposed included a point system whereby appeals essays were graded based on grammar rules and very subjective factors such as “believability.” The next day I called an impromptu AR team meeting for the sole purpose of reconstructing the proposed rubric. All members of the committee were present, and we jointly offered input regarding the development of a rubric that would capture the committee’s thoughts about the candidate’s ability to clearly articulate goals, identify setbacks and barriers, and communicate plans to overcome them. In addition, we wanted the committee to consider personal and work-related successes, earned credentials, and other artifacts indicative of a candidate’s grit. The next week, I resubmitted the rubric to the appeals committee. They reviewed it, deliberated for less than five minutes, and then accepted it with no additional modifications. Appendix F includes the final version of the rubric. Over the course of the next three months, I reviewed the appeal approvals by the Admissions Appeals Committee and evaluated the process. In reviewing the data, I asked questions regarding how the appeals committee was adjusting to the new form and methodology. As I reviewed the admission and denial decisions, aligning them with the accompanying rubric, I found myself questioning the rationale of some of their decisions, but I did not intervene in the process. I also monitored the incoming PTS Questionnaires, and the process seemed to be efficient and effective.

Evaluating Action: Reviewing Outcomes

During our first five months together, the entire AR team seemed engaged. However, shortly after that period, Dr. Kim became less and less engaged in the project, and approximately

seven months into the AR project, she resigned from the university and elected not to continue as a team member. Thus, our AR team continued as a group of three.

A couple of months later, Dr. Mary retired from Lakeland University. I feared that I would lose her from the team as well, but she told me that she was committed to the process and wanted to continue as a member of the AR team, which we all appreciated. At this point, the team was approaching the beginning of the first semester. Group 1 participants had been identified, and they were about to begin their first semester. We reduced the frequency of our AR team meetings from monthly to quarterly, or as needed. Our final three team meetings were approximately three months apart; the purposes of these meetings were to review the data that were collected, evaluate how things were working, make any necessary changes, and share reflections.

One Cycle with Mini-Iterations

After months of collaborating—as an AR team and with the Admissions Appeals Committee—I was able to reflect about the co-created work required to support this change effort. Figure 7 illustrates our single-cycle AR process and describes the key aspects within each step of the cycle.

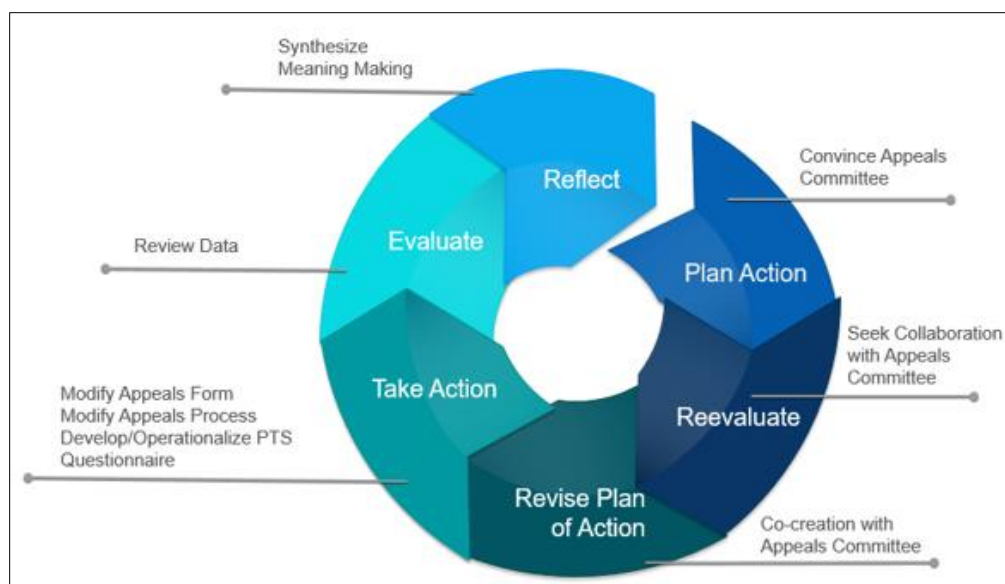


Figure 7. Description of the single AR cycle activities that influenced this study.

As the team moved through the phases of the AR cycle, we reflected on the premise, content, and process (Mezirow, 1991). Before we launched this study, we reviewed relevant data and existing literature to identify underlying assumptions about and perspectives on the issue. We consistently thought about how the evolving study would affect the PTSs in both the short and long terms. We considered the strategies and procedures for influencing change and the methods for enacting it. This single-cycle approach to this study, though unconventional, served the intended purpose.

The most significant unintended benefit was the partnership with the Admissions Appeals Committee. During the initial planning stages, the committee was viewed as a barrier. With that perception as a frame, we discussed ways to influence the committee to change its methodology during the evaluation process and even considered the possibility of using our collective positional power to force change. However, we wisely chose instead to present the problem to the appeals committee, share our findings, and ask the committee to support this cause. We did

not anticipate that the committee members would become partners in this process—and co-creators in the planning of the action—and experience possibly the most substantive learning.

The Admissions Appeals Committee, unlike the AR team, was not a collection of insiders with terminal degrees and recognized positional authority. In many regards, the committee **was** a domain for members to exercise decision-making authority. Their charge was to exercise their best judgement when admitting students whom they believed would succeed at Lakeland University. Collaborating with the AR team on the redesign of the appeals forms, the implementation of the assessment rubric, and the inclusion of artifacts that would be used in the evaluation process encouraged the committee to consider factors and view PTSs in ways they never would have. They expanded their view of their role beyond that of gatekeepers for the university to ambassadors for quality inclusion. Though the members of the Admissions Appeals Committee had not heard of AR, they were genuinely grateful to be included as a part of this process and they appeared to learn the most.

Preliminary Data: Group 1

By September 2018, we had collected all of the data related to Group 1. As a team, we reviewed the data collected for this group and completed a preliminary review of the profile of those admitted via appeal. We looked at participants' appeal letters and conducted a high-level scan of their Qualtrics survey responses. During this process, Dr. Joe and Dr. Mary excitedly began to formulate their own interpretations of why the students were unsuccessful academically in the past but would succeed this time. We then shifted our conversations to planning for the data-collection process for Group 2. After reviewing the preliminary data collected, there were no suggested modifications to the process.

By the time we met again as a team in January 2019, Group 1 was concluding its first semester, and we had nearly finished collecting data for Group 2. I was able to give the team a preliminary analysis of Group 1 data. There were 43 students in Group 1; 31 students had been admitted based on meeting the admissions criteria, and 12 had been admitted via the appeals process. I shared that, as a whole, the enrolled PTSs had an overall GPA of 2.38, and 33 of the 43 were enrolled for the spring 2019 semester. Those who were admitted by meeting the admissions criteria had an overall GPA of 2.19, and 22 of the 31 were enrolled for the spring 2019 semester. Those who had been admitted via the appeals process had an overall GPA of 2.91, and 11 of the 12 were enrolled for the spring 2019 semester.

At this meeting, we also looked at the ITIS and the Grit-S scores for each group. The ITIS uses as a measurement the sum of all the responses rated on the Likert scale. The highest a student can score is 48. On this scale, a score of 8 to 16 indicates a fixed mindset; a score of 17 to 24 indicates a semi-fixed mindset; a score of 25-32 indicates uncertainty about whether intelligence is malleable; a score of 33 to 40 indicates that the student believes malleability is possible; and a score of 41 to 48 indicates a student who has a growth mindset. The Grit-S uses an average of the scores on the Likert scale. The highest average would be a 5, and a score of 1 would indicate that a person is not gritty, while a score of 5 indicates a person who is extremely gritty.

The average ITIS score of those who had been admitted by meeting the admissions criteria was 31.29. This score indicated that the students were not sure if their mindset was malleable. The average ITIS score of those admitted via the appeals process was 32.92, signifying that they thought malleability of mindset is possible. The average Grit-S score of those admitted by meeting the admissions criteria was 3.46, and 3.63 for those admitted through

the appeals process. In these preliminary findings, it was interesting to see that those admitted via the appeals process had significantly higher GPAs and retention than those admitted through the traditional admissions process. The ITIS and the Grit-S scores for the PTSs admitted via appeal were higher as well. At that time, we were not certain if this finding was statistically significant, but we still thought it was notable (see Table 8).

Table 8

Group 1 Preliminary Data of Admitted PTSs

Admission Type	Total	GPA	Retained	Retention %	ITIS	Grit-S
Traditionally Admitted	31	2.19	22	71%	31.29	3.46
Admitted via Appeal	12	2.91	11	92%	32.92	3.63

Our final team meeting took place about one month before the final grades for Group 2 would be available. We were nearing the end of the semester, and Dr. Joe communicated that he needed to finalize grades for his classes and was preparing to go out of town for the summer, so we decided to formally end our AR team before all of the results were finalized. During our final team meeting, I presented a PowerPoint presentation that outlined our work up to that point and summarized what we had accomplished. We discussed the fact that I would soon begin gathering and synthesizing the data from Group 2 and that I would interview Dr. Joe and Dr. Mary individually to glean information about their respective experience as AR team members. We collectively discussed all that went into the process and how we were hopeful that the outcomes from this study would lead to change in the PTS admissions process.

Research Question 1: Analysis and Findings

At the end of May 2019, I had collected all of the data from both groups. I collected data from an additional 22 students in Group 2; therefore, there was a total of 65 participants. Forty-seven students had been admitted through the regular admissions process and 18 through appeal. In order to effectively answer Research Question 1—“What can be learned from considering mindset and grit as factors related to academic success of PTSs at a public four-year university?”—I used both quantitative and qualitative methods. Additionally, it was to further segmenting those who had been admitted through the appeals process from those admitted through the traditional admissions process. By this time in the project, our AR team had disbanded, so I analyzed these data myself.

Quantitative Analysis: Using Regression and T-test Analysis to Foster Understanding

I separated the students admitted through the traditional admissions process from those admitted via the appeals process, and analyzed them separately. I analyzed the GPA, incremental intelligence, and grit scores of those admitted based solely on their GPA and test scores. The incremental intelligence score was directly linked to mindset.

Traditionally admitted students. I ran a single regression on the 31 students from Group 1 who had been admitted without having to appeal and determined that there was a statistically significant relationship between Group 1’s GPA and mindset scores. The p-value for mindset score was .033, indicating a moderately significant correlation. The coefficient was .09, indicating a positive relationship between GPA and mindset score. As mindset score increased, GPA also increased.

Grit score was not significantly related to GPA for Group 1. For Group 2, there appeared to be no relationship between mindset, grit score, and GPA for the 16 students admitted through

the traditional admissions process (see Table 9). This findings suggest that grit score was not related to GPA in Group 1 or Group 2. Mindset was related to GPA in Group 1 but not in Group 2.

Table 9

Group 1 Regression Analysis for Traditionally Admitted Students

Dependent Variable	Independent Variable	Significant	P-Value	Standardized Coefficient
GPA	Mindset	Yes	.033	.09
GPA	Grit	No	.318	.28
Retention	Mindset	No	.197	-.12
Retention	Grit	No	.055	1.38

Note. $p < .05$ indicates significance.

While grit score was not related to GPA for Group 1, it likely contributed to student retention. A logistic regression was run using retention (a binary yes/no variable) as the dependent variable and grit and mindset score as independent variables. Mindset was not related to student retention. However, grit's p-value relating to retention was .055. This suggests that, while not statistically significant, there may be a relationship between grit and retention. The coefficient was 1.38, indicating that as grit score increased, so did the likelihood of retention. However, grit was not related to retention in Group 2 (see Table 10). Mindset did not relate to retention in Group 1 or Group 2.

Table 10

Group 2 Regression Analysis for Traditionally Admitted Students

Dependent Variable	Independent Variable	Significant	P-Value	Standardized Coefficient
GPA	Mindset	No	.587	.04
GPA	Grit	No	.526	.44
Retention	Mindset	No	.441	-.13
Retention	Grit	No	.432	1.59

Note. $p < .05$ indicates significance.

Students admitted through appeal. There was not a statistically significant relationship between GPA and mindset or grit score for the 12 students admitted through appeal in Group 1 (see Table 11). The p-value for Group 1 students' GPA and mindset was .206. The p-value for GPA and grit in Group 1 was .493, which indicates that mindset and grit scores were not related to Group 1's GPA. Likewise, mindset and grit were not significantly related to retention likelihood for Group 1. For Group 2, grit and mindset did not relate significantly to GPA for students admitted after appeal (see Table 12). However, there were not enough students admitted via appeal in Group 2 ($n = 6$) to determine via logistic regression if mindset or grit was related to retention.

Table 11

Group 1 Regression Analysis for Students Admitted Through Appeal

Dependent Variable	Independent Variable	Significant	P-value	Standardized Coefficient
GPA	Mindset	No	.206	.05
GPA	Grit	No	.493	.26
Retention	Mindset	No	.652	.06
Retention	Grit	No	.798	-.45

Note. $p < .05$ indicates significance.

Table 12

Group 2 Regression Analysis for Students Admitted Through Appeal

Dependent Variable	Independent Variable	Significant	P-Value	Standardized Coefficient
GPA	Mindset	No	.736	.02
GPA	Grit	No	.145	.935
Retention	Mindset	No	N/A	N/A
Retention	Grit	No	N/A	N/A

Note. $p < .05$ indicates significance.

Comparing traditionally admitted students and appeals-admitted students. Those admitted through the traditional admissions process and those admitted through appeal were compared using t-tests. When combining all who were admitted via the appeals process, regardless of grouping, and those admitted through traditional means, the tests showed that students admitted through appeal had significantly higher GPAs than those traditionally admitted. The average GPA after one semester for PTSs traditionally admitted was 2.07. The average GPA after one semester for PTSs admitted through appeal was 2.81. The students

admitted through the appeals process also had higher average retention, mindset, and grit scores, though these differences were not statistically significant (see Table 13).

Table 13

T-Test Analysis Comparing Traditionally and Appeals-Admitted Students

Group Variable	Traditional Student Average	Appeal Student Average	Significant	P-Value
GPA	2.07	2.81	Yes	.027
Retention	.76	.89	No	.259
Mindset	32.09	33.22	No	.534
Grit	3.49	3.75	No	.228

Note. $p < .05$ indicates significance.

Grit and mindset scores as they related to GPA and retention. The students with high grit and mindset scores were compared to students with low grit and mindset scores regardless of their admission status. This was also done using t-tests. The average grit score for the entire sample was 3.56. Thus, students with a grit score higher than 3.56 were labeled as having high grit, while students with a grit score below 3.56 were labeled as lower than average grit. A similar process was used for mindset score. The average mindset score of the total sample was 32.41. Students with a higher than average mindset score were considered to have more of a growth mindset students, while students below the average were labeled as having more of a fixed mindset.

Students with higher mindset scores had significantly higher GPAs than students with lower mindset scores. The average GPA for students with high mindset scores was 2.81, and the average GPA for students with lower mindset scores was 1.78. The p-value for this t-test was .000, indicating that high mindset scores strongly related to improved GPA scores (see Table

14). The same was true for high grit scores. Students with high grit scores had an average GPA of 2.63, while students with lower grit scores had an average GPA of 1.89. The p-value for this t-test was .012, indicating that higher grit scores strongly correlated with improved GPAs. However, while students with high mindset and grit scores did show an improved likelihood of retention, these differences were not statistically significant.

Table 14

T-Test Analysis Comparing Students with High and Low Grit and Mindset Scores

Tested Variable	Group Variable	High Average	Low Average	Significant	P-Value
GPA	Mindset	2.81	1.78	Yes	.000
GPA	Grit	2.63	1.89	Yes	.012
Retention	Mindset	.83	.77	No	.595
Retention	Grit	.84	.75	No	.359

Note. $p < .05$ indicates significance.

Admission path, mindset, and grit as they related to GPA and retention. To determine if mindset, grit, and admission path were related to GPA, a single regression was run using GPA as the dependent variable, mindset and grit score as independent variables, and admission pathway (i.e., traditionally admitted or admitted through appeal) as an interaction between both independent variables. It was determined that mindset was a significant variable relating to GPA, but that grit was not. Mindset did not have a significant interaction with admission pathway related to GPA (see Table 15). Mindset without an interaction had a p-value of .014 and a coefficient of .08, indicating that mindset strongly correlated to an increased GPA. Grit score's p-value was .210 indicating that it was not significantly related to GPA. Mindset

when interacting with admission pathway relating to GPA had a p-value of .569 and a coefficient of .99.

To determine if mindset and grit score (interacting with admission pathway) were related to retention, a logistic regression was run using retention as the dependent variable and mindset and grit score as independent variables. Admission pathway was set as an interaction for each independent variable. It was determined that grit score, when not interacting with admission pathway, was related to retention (see Table 15). Grit score had a p-value of .034 and a coefficient of 1.4, indicating that as grit score increased, so did the likelihood of retention. When grit score interacted with admission pathway the p-value was .99. The data suggest that while mindset may be related to GPA, it is related to retention, and grit is related to retention but not GPA. Neither variable had a significant interaction with admission pathway as it related to GPA or retention.

Table 15

Regression Analysis for GPA and Retention, Adjusting for Mindset, Grit, and Admission Pathway

Dependent Variable	Independent Variable	Significant	P-Value	Standardized Coefficient	Interaction P-value
GPA	Mindset	Yes	.014	.077	.665
GPA	Grit	No	.219	.33	.882
Retention	Mindset	No	.125	-.12	.074
Retention	Grit	Yes	.034	1.44	.099

Note. $p < .05$ indicates significance

Summary of quantitative findings. Though I used methods of quantitative analysis to help identify what can be learned from considering mindset and grit as factors related to the

academic success of PTSs, the scope, sample size, and length of this project prohibited any generalizable takeaways. The summary of these findings only points to the possibility of relational significance. Generalizable meaning making would require further exploration, a larger sample size, and a longitudinal study. That said, the data collected and analyzed evidenced a statistically significant relationship between GPA and mindset for those admitted in the fall semester at Lakeland University. There was not a statistically significant relationship between GPA and mindset for those admitted in the subsequent spring semester, but the sample size was so small and most of that data was not statistically useful as standalone data points. When running a t-test to compare those with high mindset scores with those with low mindset scores, the p-value suggested that those with high mindset scores had significantly higher GPAs than those with lower mindset scores. Additionally, when looking at admission pathway as a variable related to GPA, mindset scores were the only significant variable. The compilation of this data suggests that the belief that intelligence can grow (i.e., a growth mindset) was an influential factor in higher academic performance at Lakeland University.

While the data revealed that grit was not related to GPA at Lakeland University, there were indications that it could be related to student retention. The p-value in the regression analysis for GPA and retention, when adjusted for mindset, grit, and admission pathway, showed a significant relationship between grit and student retention. The coefficient number suggested that as the grit score increased, so did the likelihood of retention. However, when analyzing the other segmented groups, there were no other instances of significance. This suggests that while there is the possibility of a relationship between grit and retention, the results from these data are not strong enough to consider this a finding.

Qualitative Analysis: Insights Related to Research Question 1

The complexity of answering Research Question 1 requires the use of both quantitative and qualitative methods and analysis. In this section, I outline the analysis of qualitative data from students admitted through appeal and from post-project interviews with the AR team members.

An in-depth understanding of PTSs. The qualitative data collected comprised essays written by students admitted through the appeals process. I analyzed the data using narrative analysis in order to gain a more complete understanding of the experiences and events that led to the PTSs' past academic failure, as they understood them. Narrative analysis focused on the stories themselves and sought to preserve the integrity of personal biographies (Sandelowski & Barroso, 2003) or series of events that could not adequately be understood in terms of their discrete elements (Riessman, 2000). The coding strategy involved reading the stories and classifying them into general patterns (Bamberg, 2012).

As part of the narrative analysis, I developed a matrix to record important themes I deemed helpful for addressing Research Question 1. During this process, it was important to note how the PTSs made sense of the events and actions that led to their needing to appeal their admissions denial. When reading the appeals, I began to identify themes, patterns, and relationships that were associated with expressions of certain thoughts, emotions, or dispositions (Phoenix, Smith, & Sparkes, 2010). After reading all of the essays multiple times, I highlighted and underlined words and phrases I felt were potentially significant in indicating a growth mindset and/or grit, or the lack thereof. I then recorded other factors that seemed relevant to understanding the PTSs in the study. Table 16 shows the collection of these categories and themes.

Table 16

Profiles of Appeal Applicants

Participant	Major	Researcher Perception of Disposition	Perceived Evidence of Disposition	Reason for Past Failure	Grit/Growth Mindset Evidence	Time Since Academic Failure	Professional Experience	Years of Professional Experience
Appeal #1	Nursing	Humbled and determined	“I humbly request that you reconsider and take another look into my application.” “I have defeated so many obstacles in my path”; “I am determined to become a nurse”; I refuse to allow anymore obstacles or excuses to stop me.”	Serious illness (bleeding disorder and eclampsia)	Evidence of achievement (certifications, honors, and homeowner at the age of 25)	8 years	Patient Care Technician, Certified Nursing Assistant	Unknown
Appeal #2	Film Production	Blameless and illogical	“My English instructor turned my incomplete to a ‘C’ and I had received A’s on all my coursework.” “The reason for my denial is one single qualifying transfer grade of a C from 1990.”	Car accident and it’s the English professor’s fault	Others say she can be successful (letters of recommendation); proof of achievement (copies of certifications earned); drive, passion, and dedication	26 years	Grant Writer, Fundraising, Management	10 years

Participant	Major	Researcher Perception of Disposition	Perceived Evidence of Disposition	Reason for Past Failure	Grit/Growth Mindset Evidence	Time Since Academic Failure	Professional Experience	Years of Professional Experience
Appeal #3	Legal Studies	Partial ownership	"I attended XXX College where I received a GPA of zero."	Was young, was unsure of self and lacked direction; parents were not supportive; job was not flexible; English professor was discouraging	Academic failure 10 years ago; now stable employment and flexible school-friendly schedule	10 years	Manager, Trainer	9 years
Appeal #4	Political Science	Changed	"I was young and did not value education at the time."	Young and immature	Associates degree earned and now member of the US Army	6 years	Supply Specialist	7 years
Appeal #5	Accounting	No excuses	"I attended two colleges prior to XXX where I didn't have success."	None given	Has earned an associate degree; academic failure was more than 25 years ago	26 years	Fundraiser, Office Assistant, Coordinator, Customer Service	18 years
Appeal #6	Health Sciences	Determined and motivated	"I did not meet the requirements to be admitted to this university, but I will not allow my past failings to defeat me. I am determined and motivated."	Unmotivated, undisciplined, and no guidance	Earned rank of Sergeant in the U.S. Army in just 3 ½ years; has learned to set goals and establish a process to achieve	7 years	Network Operator	5 years
Appeal #7	Paralegal Studies	Deserving	"I understand that you must uphold a standard, however please don't allow one point to be the only basis for your decision."	Missed requirement by one point on the math test section	20 years military experience and seeking degree in area he worked in the military	38 years	Retired Master Sergeant U.S. Army	20 years

Participant	Major	Researcher Perception of Disposition	Perceived Evidence of Disposition	Reason for Past Failure	Grit/Growth Mindset Evidence	Time Since Academic Failure	Professional Experience	Years of Professional Experience
Appeal #8	Biology	Responsible	“Through experience and life’s lessons I’ve learned to confront situations and create an action plan instead of avoiding them.”	Taking care of chronically ill parent; death of parent led to depression	Seemed focused on academic success and prepared for the challenges of college	10 years	Patience Care Coordinator	8 years
Appeal #9	Administrative Management	Humble	“It would be an honor to attend this highly prestigious university and if you choose to give me a chance, this will change my future forever.”	Mental health issues (depression and anxiety)	Progressive promotion and professional achievement; seemed dedicated and committed	4 years	Full-time Supervisor	Unknown
Appeal #10	Nursing	Humble	“I fully understand the reason for my rejection from admission, but would like to ask you to reconsider my admission.”	Young mother attempting to go to work and school full-time	Academic failure 12 years prior, and she stated she now has the support from family and friends to help her complete her degree	12 years	Unknown	Unknown
Appeal #11	Biology	Persistent	“Through everything I went through, I learned that you always have to move forward and vision better days, you have to do as much as you can and expect success at all cost.”	Moved from out of state and struggled to support himself and stay focused on school	Academic failure over 10 years prior; seems more stable	5 years	Unknown	Unknown

Participant	Major	Researcher Perception of Disposition	Perceived Evidence of Disposition	Reason for Past Failure	Grit/Growth Mindset Evidence	Time Since Academic Failure	Professional Experience	Years of Professional Experience
Appeal #12	Legal Studies	Motivated	"I genuinely am excited about what I am learning and eager to take on the challenge."	Unorganized and lacked motivation	Working in a related career, needs the degree for advancement, and appears to be motivated, focused, and determined	14 years	Administrative Assistant, Legal Aid	Unknown
Appeal #13	History w/Teacher Certification	Desperate	"I know I have the potential for academic success. If your committee decide to let me be admitted into your school I can begin to get my life back on track."	Unhealthy relationship, single mother, victim of sexual assault, and death of close family member which led to depression	*Not recorded	10 years	Customer Service, Sales	8 years
Appeal #14	Biology w/Teacher Certification	Resolved	"All I'm trying to do is put my past behind me and become a better, more successful person."	Behavioral issues that led to expulsion	Spent time at a military academy after expulsion and appears focused on change	8 years	Unknown	Unknown
Appeal #15	Nursing	Responsible	"I have had academic difficulties in the past because I was eager to go back to school and I didn't really plan it through."	Raising three small children while working a full-time and part-time job	Successful going back to school and earning certificates as a nursing assistant and medical assistant; acceptance in a medical assistant leadership program at established medical group	12 years	Nursing and Medical Assistant	4+ years

Participant	Major	Researcher Perception of Disposition	Perceived Evidence of Disposition	Reason for Past Failure	Grit/Growth Mindset Evidence	Time Since Academic Failure	Professional Experience	Years of Professional Experience
Appeal #16	Dental Hygiene	Victim of circumstance	"I did not finish school for many reasons with some being out of my control."	Death of immediate family member, financial challenges, managing work and school	Personal story of persistence which led to progressive promotion at work	6 years	Hiring Coordinator and Management	Unknown
Appeal #17	Film Production	Mature	"I know my transcript looks very rough, but if you get to know me and see what I've done these past seven years, you'll see I'm a changed person for the better."	Injury in college which made him unable to continue to play college basketball, which led to depression	Earned license to sell insurance, progressive achievement and professional experiences	15 years	Appeal #17	Film Production
Appeal # 18	Nursing	Resilient	"I set my goal, overcame my setbacks, and I accomplished my goal."	Death of child which led to depression	Personal story of overcoming tragedy and setting and achieving goals; academic failure over 10 years ago	11 years	Customer Service and Paraprofessional	2 years

Note. * Unknown = Student did not report this information

After reading all of the appeals, I observed that approximately half of the PTSs admitted through the appeals process displayed a disposition of determination, humility, and/or resiliency, and seemed to take responsibility for their past academic failures. In their narratives, 16 of the 18 participants displayed a high level of internal attribution (Kelley & Michela, 1980; Silver, 2012). Notably, 11 of the 18 participants identified personal tragedy, long-term illness (of oneself or a loved one), depression, or a combination of personal circumstances as contexts regarding their failure. However, only one participant used their unfortunate circumstance as an *excuse* for why they were not academically successful in the past. The amount of time that had passed since each PTS's academic failure ranged from four to 38 years. Collectively, the average time that had elapsed since the academic failure was 11.89 years, and the median time that had elapsed was 10.5 years. I thought it was also important to look at each student individually to determine if there was any correlation between their reasons for past failure, evidence of grit or growth mindset, the time that had elapsed since academic failure, academic GPA, retention, and their mindset and grit scores. The data are presented in Table 17.

Table 17

Demographics of Students Admitted Through Appeal

Appeal #	First Semester GPA	Registered for Future Semester	Mindset	Grit Score	Years Since Past Failure
1	Withdrew	Y	27	3.125	8
2	4.00	Y	44	5	26
3	3.33	Y	35	2.125	10
4	2.00	Y	35	4.125	6
5	Withdrew	Y	20	4.125	26
6	3.50	Y	31	4	7
7	3.00	N	30	3.75	38
8	3.27	Y	42	3.875	10
9	1.00	Y	30	2.75	4
10	2.50	Y	21	3.5	12
11	3.50	Y	44	3.375	5
12	3.00	Y	38	3.75	14
13	2.33	N	28	4.375	10
14	1.71	Y	36	3.5	8
15	1.33	Y	27	2.75	12
16	3.5	Y	40	5	6
17	3.33	Y	29	4	15
18	3.6	Y	41	4.375	11
Average	2.81	Y = 16; N = 2	33.22	3.75	12.7

Interestingly, the number of years since past failure had seemingly little impact on first-semester GPA or retention. Those who had 12 years or more of elapsed time since their academic failure had an average GPA of 2.85, while those who had less than 12 years of elapsed time since their academic failure had a cumulative GPA of 2.77—an insignificant difference in GPA. Of the 18 students, only two did not re-register for the next semester; thus, overall,

retention for this group was high. Also, it did not appear that elapsed time had an impact on retention at all.

Those who had 12 years or more of elapsed time since their academic failure had significantly lower overall mindset scores than those who had less than 12 years of elapsed time since their academic failure. The average mindset scores for the entire group was 33.22. The average mindset score for those with 12 years or more years since their academic failure was 27.29. Those whose academic failure had occurred less than 12 years earlier had a mindset score of 35.36; however, those who had 12 years or more of elapsed time since their academic failure had significantly higher grit scores. The average grit score for this group was 3.75. The average grit score of those with more than 12 years since their academic failure was a 4.375. The average grit score of those with less than 12 years since their academic failure was a 3.69. This may indicate that those with more elapsed time since experiencing academic failure had more of a performance-goal orientation as opposed to a mastery goal orientation, but were grittier than those who had more recent academic setbacks.

Emergent learning about mindset and grit. As a final way to address Research Question 1, I interviewed the remaining two members of the AR team to discuss their experience as contributors to this project. Both Dr. Joe and Dr. Mary highlighted elements of the research they thought were successful or impactful, and provided insight into what could be learned from considering nontraditional factors in student admission.

I analyzed their interviews using a multi-step thematic analysis proposed by Braun, Clarke, Terry, and Hayfield (2017). It was important to first read and re-read both interview transcripts after each interview was completed. Using NVivo, keywords and recurrent phrases began to emerge, including *challenge, benefit, diversity, working as a team, motivation,*

traditional measures, nontraditional measures, and decision making. After establishing a coding scheme, I searched for themes within those codes. The prominent theme that was most closely related to Research Question 1 was *increased inclusiveness*.

Increased inclusiveness. Both Dr. Joe and Dr. Mary felt that looking at nontraditional factors during the admission process would strengthen Lakeland University and ultimately improve the diversity of the student population. As Dr. Mary indicated,

One of my life goals is to build a more democratic inclusive society. And however I can do ... that—there's many ways to do that—but so this is an example of one way and we were, are, doing that and hopefully this will continue.... This work will open up the door for more people with more experiences and different life experiences. I know this might sound a little hokey, but we're building a more inclusive, truly democratic society, so that affects me personally and professionally.

Dr. Mary believed that assessing students using nontraditional methods of admission allows students to be considered for admission who may have otherwise been overlooked. She reinforced this thought during her interview:

I think this project was really aligned with my way of thinking, that we should be looking at broader categories, different categories other than GPA and SAT. You know that there are more components, just like there's more kinds of intelligence than one type of intelligence.

Dr. Joe shared that being a part of this AR team and participating in this study introduced him to new concepts and expanded his way of thinking:

I had heard of the term *grit* before and now academic mindset, and though those terms have been around for a long time, they seem to be resurfacing, because now, even though

I'm interested in non-cognitive factors and not just college success but individual success, we have never had those terms to apply. So, looking at some of the research and reading is actually helping me with my own research and as a professional, and now I'm seeing and hearing the words all the time, and the academic mindset is really part of what we're looking at with students in the state.

Like Dr. Mary, Dr. Joe believed that by considering a student's grit and mindset, rather than just traditional admissions requirements, Lakeland would be able to select students who could thrive in an academic environment, even though traditional measures may indicate otherwise. His thoughts seemed to be supported by the quantitative results, which suggested that mindset is related to GPA and that grit is related to retention. Neither grit nor GPA was significantly related to admission pathway, indicating that students accepted through nontraditional routes were not disadvantaged compared to traditionally admitted students. This indicates that considering alternative factors like mindset and grit as opposed to traditional admissions criteria may allow administrators to more accurately assess a student's potential for future success.

Research Question 2: Analysis and Findings

Research Question 2 asked, "What can be learned about using alternative metrics in the admissions process for PTSs at a public four-year university?" The interviews with Dr. Joe and Dr. Mary were used exclusively to answer this question. The themes related to Research Question 2 included the importance of collaboration and including new voices. These themes were derived from the interview transcripts using the same six-step thematic analysis protocol proposed by Braun et al. (2014).

Collaboration

Both Dr. Joe and Dr. Mary indicated that collaboration was necessary for supporting the use of alternative metrics in the admissions process for PTSs at Lakeland University. Dr. Joe indicated that the group meeting method employed in this research inspired him to consider using a similar method in his own work. He commented:

As a past enrollment manager I am still very interested in college admissions and what helps students be successful, and I'm doing some research similar to what [this study] is doing—that just happens to be a coincidence. So I think that the learning about how the group comes together and looks at the situation, looks at solutions, and looks at the problem makes a difference. And though we do this internally as part of our work in higher education, this was a much more intentional approach, with the roles and responsibilities that are very, very specific, with meeting agendas, with targets and a format that I may even follow in the future.

Here, Dr. Joe implies that while universities often rely on collaboration, the AR process was unique in its intentional approach to collaboration. Dr. Mary indicated that she often collaborated with colleagues as a university professor but that doing so intentionally made the research more effective. According to Dr. Mary,

I do like to collaborate and work in groups already, and you know most of us in higher ed do, but I think that sometimes you enter into a group and the elements are already established and you really don't have the impact that you hope to have, and that happens not just in higher education but any organization, so what this shows me is that it's a good refreshing example, that it is possible to shape a process and a product. So there were some parameters that we started with [in this group] as there should be, and that's helpful

to have parameters, but through our discussion and collaboration, we were able to affect those parameters and modify the process and some of the key elements even though that also [was] an ongoing process with a committee. I think that is also a way we affected the solution.

New Voices

Dr. Joe and Dr. Mary agreed that inviting new voices to the table was a condition necessary for supporting the use of alternative metrics in the admissions process for PTSs at Lakeland University. As they reflected, they concluded that the opinions of individuals from different backgrounds throughout this action research process challenged their ways of thinking and encouraged them to expand their understanding related to student success and student admission. This theme relates to collaboration since individuals were collaborating on the research, but it is distinct in that it involved collaborating with a multi-disciplinary group. Dr. Joe indicated this by saying,

[This research] reaffirmed that there is still a lot out there in terms of research that I'm not familiar with, and even though it does relate directly to my research and academic discipline, it is in fact another reminder about the benefits of working collaboratively as a team. When there is a lot of work or even a project where you can pull others together as a team, you can have much more focus and valuing input that we shouldn't be making decisions or making changes professionally in a vacuum because all members of the team brought different backgrounds, different experience, different knowledge bases, different motivations to the table with them to make the whole project stronger.

Like Dr. Joe, Dr. Mary believed that having a diversity of input made the research stronger. A similar theory could be applied to the student body. If diversity in the research process made the

research stronger, diversity in the student body could make the university's academic community stronger. Dr. Mary supported this by saying,

I do think through our discussions that because you were open and listening to the factors that we did talk about in the suggestions we had that it makes me, again, feel like you can impact, I can impact, a process.... So I don't think I'm saying that very well, but there [is] still a place for people to be included in the conversation even if the experiences they bring may not at first seem ... particularly relevant.

Students admitted through nontraditional means may have initially been overlooked because their experiences were not considered relevant. However, the quantitative data indicated that student admission pathway is not related to student GPA or retention. This means that while these students' academic profile may not have appeared as strong as students admitted through traditional routes, they were just as capable as succeeding in an academic environment.

Conclusion

As a part of this doctoral journey, I identified an area of passion that I previously did not know existed. I learned about this fascinating methodology of addressing a problem by engaging a system using an interactive inquiry process that balances problem-solving actions with collaborative analysis to facilitate and understand organizational change. I assembled a team and taught them the process, and we used the AR process to influence a system. The team constructed, designed, and implemented a change process for the purpose of creating more equality. For a year, we collected and analyzed data, and now 18 PTSs who would have traditionally been denied the opportunity to earn a four-year degree from a public institution now have access as a result of this study.

Three months after the conclusion of the AR project, I left Lakeland University for a similar position at a university in a different state. We were in the midst of enrolling students for both summer and fall 2019, and the university leadership elected to keep using the revised appeals process for all students. As far as I know, even though the formal AR project has concluded, Lakeland is still using grit and growth mindset as factors in the admissions process. The goal of this study was always to evoke change, not only at Lakeland, but also at the SB level. Now that I am no longer with Lakeland, I hope that someone else will serve as a voice for PTSs at Lakeland and that the impact will inspire change at the SB.

Overall, I am proud of the work we did. I am happy that the early results show a lot of promise for the PTSs admitted as a result of this project. I will admit that I struggled considerably with the AR process. Throughout this project, my major professors had to constantly remind me to focus more on the process rather than just the outcome. I had to fight against my natural inclinations to see a problem and attempt to solve it, as opposed to trusting a proven method to create sustainable change.

This AR project was conducted using a single cycle, but in order to create the sustained change desired, at least one additional cycle would have been preferable. Employing an additional cycle would have given us the opportunity to reflect and capitalize on what we learned during the first cycle. The appeals committee members, particularly the chair of the committee, ultimately became key contributors to this process. Arguably, this group experienced the greatest amount of learning and transformation throughout this process; thus, adding the appeals committee chair to the AR team during an additional cycle could have created a richer experience for the entire team. A second cycle, with representation from the appeals committee, could very well have created an additional layer of buy-in and commitment to the AR process. In

turn, this deeper level of ownership of the change process would have increased the likelihood of creating an environment for long-term sustainability. Additionally, another cycle would have enhanced the quality of our evidence of the change process and provided more support to validate our findings.

As I share in greater detail in Chapter 4, I learned a significant amount during this process. I know that I could have utilized my AR team and the appeals committee more effectively. I realize in hindsight that I could have provided more data and support for my answer to Research Question 2. In Chapter 4, I further discuss the insights gained from the research and the AR process, how this project might contribute to actionable knowledge, and potential implications for future leaders of change.

CHAPTER 4

INSIGHTS AND ACTIONABLE KNOWLEDGE

The purpose of this action research study was to learn from the experiences of a public four-year university that considered factors other than standardized exams and GPA in the college admissions process for post-traditional students. Two main research questions guided this study:

1. What can be learned from considering mindset and grit as factors related to academic success of PTSs at a public four-year university?
2. What can be learned about using alternative metrics in the admissions process for PTSs at a public four-year university?

In Chapter 1, I introduced the challenges faced by PTSs seeking admission to Lakeland University and presented a historical perspective on why those challenges exist as they relate to the broader landscape of higher education. I also situated this challenge within the context of the literature and highlighted the potential for this study to contribute to this body of literature. In Chapter 2, I described the AR methodology utilized for this study as well as the methods of inquiry, data collection, and data analysis. In Chapter 3, I described how the study unfolded and offered a reflective vantage from which to understand not just what happened, but why it happened. I also shared project outcomes, the ways meaning was made, and the learning that emerged. In this final chapter, I address the research questions by sharing insights and actionable knowledge gained by discussing the role and impact of AR in the study and examining the final

study conclusions. I also share implications for future practice and research, limitations of the study, and final reflections.

Study Conclusions

Two main conclusions emerged from the findings and reflections of this AR study. Specifically, these conclusions grew from the learning detailed and the findings discussed in Chapter 3, and are situated within the context of the current scholarly literature to provide a potential path forward for future scholars and practitioners. Table 18 summarizes the research findings.

Table 18

Research Findings

Research Questions	Findings	Key Theme/Implication
1. What can be learned from considering mindset and grit as factors related to academic success of PTSs at a public four-year university?	- Those with more of a growth mindset had higher GPAs. The admission pathway, or academic admissions criteria, had no statistical relevance to academic performance, which signaled a relationship between mindset and GPA. - A logistic regression connected those with higher levels of grit to retention, which signaled a relation between grit and retention.	(1) Both grit and mindset have promise as alternative evaluative tools in the pre-admission process of PTSs.
2. What are the conditions necessary to support the use of alternative metrics in the admissions process for PTS at a public four-year university?	- The methodological framework of AR created the environment for meaningful dialogue, co-creation, diversity of thought, and inclusion of alternative approaches. - Positionality, power, and influence were key to navigating potential political pitfalls and gaining support for potential change.	(2) Collaboration and inviting new voices were change accelerators. (3) Pre-understanding, role duality, and access were critical stimulants in the change process.

Conclusion 1: Mindset and Grit Are Promising Factors to Consider as a Part of Alternative Methods in the Pre-Admission Process

Research Question 1 asked, “What can be learned from considering mindset and grit as factors related to the academic success of PTSs at a public four-year university?” The learning from this study was that mindset and grit show promise in the pre-admission evaluation of PTSs. The AR team learned that mindset and grit were related to academic success, as we defined it, at

Lakeland. While the sample size of participants and the rigor of the quantitative and qualitative methods employed in this study did not meet the threshold of a mixed-methods study and, as such, the information is not generalizable, the findings support and add to the existing literature.

Mindset. Consistent with findings from previous literature, this study provides further support for a relationship between mindset and academic GPA. Those with more of a learning-goal orientation versus a performance-goal orientation had higher GPAs. The admission pathway, or academic admission criteria, had no statistical relevance to academic performance. In this study, we ran a regression analysis to determine if mindset, grit, and admission pathway (traditional admission or admission through appeal) were related to GPA. We used GPA as the dependent variable, mindset and grit score as independent variables, and admission pathway as an interaction between both independent variables. We determined that mindset was significantly related to GPA but that admission pathway was not a significant variable in the relationship, and that admission pathway was not related to GPA. This suggests that the PTS mindset had an impact on first-semester GPA, but previous GPA and test scores were not significant factors.

Eppler and Harju (1997) found that learning-goal orientation was positively correlated to successful academic performance for both traditional and nontraditional students. Goal orientations were found to be more closely related to academic success than student admission status. Eppler et al.'s (2000) study of nontraditional students using Dweck's (1986) theory of implicit intelligence, found that nontraditional students who had higher learning orientations or growth mindsets also had higher GPAs. Though not focusing on the same population of students, Grant and Dweck's (2003) longitudinal study with pre-medical students provided evidence that those who had learning-goal orientations had higher grades and greater improvement over time as well.

I believe the pre-admission process of using narrative analysis to identify students thought to have a higher mindset was a significant contribution to the literature. The revision of the admissions appeals form and the addition of the evaluative rubric was important in the identification of students believed to have the non-cognitive acumen to be academically successful. There was no coincidence that those who were admitted through the appeals process had higher mindset scores and GPAs than those admitted through the traditional admission process (see Table 19).

Table 19

Average Mindset and GPA of PTSs Admitted Through Appeal and Traditionally Admitted, Groups 1 & 2 Combined

	PTS Admitted on Appeal	PTS Traditional Admission
Avg. Mindset Score	33.2	31.5
Avg. GPA	2.81	2.09

One of the questions on the modified appeals form asks, “Why do you believe you have the potential for academic success even though you did not meet all the admissions requirements?” This question was designed to probe applicants’ beliefs about themselves; specifically, it invited the PTSs to discuss in narrative form their academic mindsets and beliefs about learning. Having answers to questions like this during the pre-admission process could serve as a useful information during the evaluation process. Because there is no existing literature that connects narrative analysis and academic mindset, this approach could have promise for future exploration.

Grit. Consistent with Duckworth’s (2016) studies connecting grit with persistence, in this study grit was found to be related to retention. A logistic regression was run to determine if grit

was related to retention, and while there was a relationship, the regression showed that admission pathway was not a significant factor in the relationship. One of the central predictive posits about grit is that it predicts success more reliably than talent or IQ. Duckworth (2016) discussed studies involving cadets at West Point Military Academy, new educators teaching in rough neighborhoods, and salespeople at private companies. Duckworth's research team tried to predict which cadets would stay in military training and which would drop out, which teachers would quit before the end of the school year and which would stay and be the most effective at improving learning outcomes for their students, and which salespeople would meet their sales quotas and earn the most money. In all of these very different contexts, grit emerged as the one significant predictor of success.

The pre-admission question on the modified appeals form was key in identifying those believed to possess grit. The modified appeals form asks,

Other than academic pursuits, discuss a long-term goal that you have established and accomplished. In this essay, please discuss why the goal was important to you, any setbacks or challenges you faced, and the method you used to overcome those challenges?

This question is important since it allowed the appeals committee to evaluate the accomplishment of PTSs long-term goal with the persistence required to earn a four-year degree. Questions like this could provide evidence of other indicators of future success that would otherwise be unknown. Table 19 displays the disparity in average grit score and retention rate for those admitted through the appeals process and those admitted traditionally.

Table 20

Average Grit and First-Semester Retention of PTSs Admitted Through Appeal and Traditionally Admitted, Groups 1 & 2 Combined

	PTS Admitted Appeal	PTS Traditional Admission
Avg. Grit Score	3.75	3.47
Retention Rate	89%	77%

The analyzed narrative essays submitted by PTSs who appealed revealed that those students shared common characteristics: They had a high level of internal attribution, and they had overcome personal tragedy. This was a significant finding. Weiner (1972, 1979) used attribution theory to conduct several studies in which he asked participants why they were or were not able to achieve certain goals. He identified four distinct categories for understanding their responses: task difficulty, luck, innate ability, and effort. Those who attributed their success or failure to effort believed they had succeeded or failed based on the work they put into the task. A significant finding from Weiner's studies were that the first three attributions were all external and beyond the control of the individual; the singular internal attribute that the individuals believed they could control was effort. Like the theory of implicit intelligence and grit, attribution theory focuses fundamentally, on what one believes about themselves. A high level of internal attribution is a mark of high self-efficacy, in which one believes they can control their own life and outcomes. Self-efficacy relates to increased goal achievement and satisfaction (Ozyilmaz, Erdogan & Karaeminogullari, 2017).

Another significant contribution to the body of literature in the evaluation of grit was the inclusion of artifact analysis. Evidence of accomplishments, such as specific contents of resumes, certificates earned, and licenses, provided additional validity and support for grit. Resumes that showed long-term employment with one company or a history of promotions may

indicate a mentality of progressive persistence. One's earning of certifications or licenses could point to the establishment and completion of important goals. Conversely, not having this evidence or having artifacts that did not reflect a gritty persona was telling as well. Though the artifact analysis could have been more scientific, it nevertheless has promise as an added element in the predictive viability of grit.

Summary of Conclusion 1. This study was innovative in that it combined mindset and grit in one study, and considered both in the admissions process for all students . I know of no other study that has focused on this factors , especially in the context of PTSs in higher education. The AR team learned that mindset and GPA seemed to be related and that grit was more closely tied to retention, at least in this small sample. We also learned that admission pathway—and, by inference, past academic performance—did not seem to influence academic success. The findings of this study supports the use of this modified approach to PTS admission at Lakeland University and may have some broader applicability with further exploration.

Conclusion 2: Collaboration and Inviting New Voices Were Critical to Enabling the Use of Alternative Metrics in the Admissions Process

Research Question 2 asked, “What can be learned about using alternative metrics in the admissions process for PTSs at a public four-year university?” In Chapter 3, I discussed the qualitative findings related to the importance of collaboration and incorporating new voices in the admissions process for PTSs at a public four-year university. The AR team interviews revealed important themes that, I argue, spoke to the conditions necessary for support this type of change effort at Lakeland University.

Collaboration. The idea that collaboration was a necessary condition for supporting a significant change initiative is not a novel idea. However, what made this notion revelatory in

this study was the methodology that the AR process requires. In AR, the client system and the researcher jointly define and analyze the problem based on a collaborative relationship (Schruijer, 2006). The planning process, interventions evaluated, action taken, data collected, interpretations rendered, and reflections were all functions of the cyclical process of AR.

The AR process itself depends on joint fact-finding, meaning attribution, and decision making. “An action researcher attempts to create conditions for change, but cannot make change happen” (Schruijer, 2006, p. 226). The richness of the collaboration the AR team experienced through this process was a result of engaging and working with stakeholders, not attempting to bypass them. The collaboration between the AR team and the Admissions Appeals Committee exemplified what Prins (2010) referred to as multiparty collaboration. The appeals committee operated under established protocols, policies, and ways of meaning making in their decision-making processes. The construct, goals, and mission of this study created complexity and ambiguity that was only resolved through a joint problem-definition strategy, and diversity of thought (Bartunek, Foster-Fishman, Keys, 1996). While working in tandem with the appeals committee was not a part of the original project design, the AR team discovered along the way that working with, not around, this group toward progress would be paramount.

The idea that there is extrinsic value in having multiple perspectives in the admissions process for PTSs is best captured by the concept of boundary crossing. Over a decade ago, many healthcare systems began to adopt a method of care whereby the various care practices, from diagnosis to cure, would be integrated along patient pathways rather than treated as discrete functions (Huzzard, Ahlberg, & Ekman, 2010). As part of this new approach, multiple stakeholders concerned about patient care were asked to weigh in on possible solutions, despite their area of specialty. This integrated care model implied intentionality in creating avenues for

productive collaborative relationships. Likewise, the practice of AR breeds the social construction of inter-organizational collaboration aimed at overcoming organizational and professional boundaries (Huzzard et al., 2010).

The role of collaboration as a change accelerator is consistent with the findings of Salm (2014). In her AR study, which explored a professional development strategy to improve collaboration between student support teams, not only did AR provide the student support teams an opportunity to research and reflect on the efficacy of what was required to more effectively support students with a variety of learning needs, but it also created a framework for developing collaborative competencies. Similar to this study, Salm found that this type of purposeful collaboration created an environment for gaining a deeper understanding of each group's professional scope of practice and point of view. This advanced understanding and appreciation of each other's motives and value drivers allowed the AR team members in this study to move toward a co-constructed plan and process for evaluating the PTSs.

There are multiple examples in the literature that point to collaboration as an accelerator for change. In addition to Huzzard et al.'s (2010) study highlighting collaboration as a change accelerator in an innovative approach to patient care, there are examples of hospital teams pointing to collaboration as a way to improve surgical quality (Campbell et al., 2010), and of employees at a nursing home using multiparty collaboration to provide better care (Schruijer, 2006). Collaboration also served as a framework for guiding business strategy between multifaceted for-profit and nonprofit entities (Omar Al-Tabbaa, Leach, & March, 2014). In the literature and with the AR team, the appeals committee, and other stakeholders, the goal was not to offend, undermine, or create a win-lose climate, but to raise awareness about an issue, educate, create dialogue, and co-construct solutions. The AR approach created a framework for

collaboration and for actualizing Lewin's (1948) vision of working collaboratively with practitioners to analyze and ameliorate problems.

New voices. The finding related to the importance of incorporating new voices and perspectives in the change process is fully substantiated in the literature on diversity and inclusion. In the organizational literature, diversity describes the composition of groups or workforces (Roberson, 2006). Diversity has also be defined as a distinct education, functional background, organizational tenure, socioeconomic background, and personality which influences interaction between groups (Harvey, Currall, & Hammer, 2017; May, 1995). The concept of diversity more accurately represents "the varied perspectives and approaches to work that members of different identity groups bring" (Thomas & Ely, 1996, p. 80).

Examining the existing literature on inclusion, researchers have used broad definitions. Pelled, Ledford, and Mohrman (1999) defined *inclusion* as "the degree to which an employee is accepted and treated as an insider by others in a work system" (p. 1014). Roberson (2006) referred to inclusion as "the removal of obstacles to the full participation and contribution of employees in organizations" (p. 217). Shore et al. (2011) argued that that information sharing, participation in decision making, and having voice are important positive consequences of diversity and inclusion and change for individuals and organizations. In AR, the value of embracing diversity of thought and ideas also implies transforming local domain knowledge into collective knowledge among the various stakeholders involved (Jacobs, 2017). In this study, the local contexts, the varied experiences, the interpretation and comparison of understanding, and the construction of shared meaning would not have been realized through the homogenous lens of members of a single department or academic unit. The new voices that were included in this process were instrumental in influencing the change process.

Reflective Insights: Pre-Understanding, Role Duality, and Access Were Critical to Stimulating and Championing this Level of Change

Though not directly supported by the data collected for this study, there were three factors that I believe were critical to enabling this level of change at Lakeland University. All of these factors have been discussed in the AR literature, and I (and I believe others) saw the powerful difference they made in fostering and creating the conditions for change.

Pre-understanding. Pre-understanding was a significant driver in this change effort. Pre-understanding speaks to the knowledge, insights, and experience held before engaging the system (Gummesson, 2000). Coghlan and Brannick (2014) referred to it as the knowledge, insights, and experience the insider-researcher has not only of the theoretical, but also the organizational dynamics. The AR team had both explicit and tactical knowledge of the system. Having more than 40 combined years of experience at an SB-governed institution provided significant advantages in infiltrating the system to effect change.

The AR team members' in-depth knowledge of the priority that the institutional leadership placed on increasing enrollment, their understanding of board policy, and their experience leading change efforts made the process of engaging the system less complex than it would have been without pre-understanding. The SB is a system steeped in bureaucracy, norms, traditions, and power blocs. An outsider or someone without a profound preunderstanding of the system could get bogged down in red tape. Without a predisposition to key system inner-workings, proposing even minor systemic changes could take a significant amount of time and resistance. Our level of insight provided foresight and allowed us to navigate through many possible obstacles.

As I reflect on the now-concluded study, I can see the disadvantages the AR team experienced in being so interconnected within the system we sought to change. Coghlan and Brannick (2014) warned that having pre-understanding may result in too much assuming and not enough probing. Ferguson and Ferguson (2001) cautioned against insider-researchers believing that they fully understand their contexts, when in fact their perspectives are partial views. Had our team not had such a strong sense of collective insight and experience, we may have looked beyond Lakeland to explore the pervasiveness of this problem we sought to change. Interviewing members at the State Board about their views on this challenge or admissions professionals at other member institutions to inquire about whether they perceived current admissions policy for the PTSs as inequitable could have provided a deeper and more thorough level of learning. I discuss this more in the Limitations section of this chapter.

Role duality. “When insider researchers augment their normal organizational membership role with the research enterprise, it can be difficult and awkward and can become confusing for them” (Brannick & Coghlan, 2007, p. 69). Operating simultaneously as a member of the AR team, a leader of a department, and a facilitator of change was difficult and often daunting. In fact, it was a tremendous burden, draining time, energy, and focus of attention. Because of the need to maintain my full organizational responsibilities, while critiquing the organization which I served, and attempting to maintain a research perspective, I encountered role conflicts that challenged my objectivity.

The ability to hold simultaneous roles is foundational to action research—but knowing this did not make it any less difficult. There were periods in this AR study when I experienced what Prys-Williams (1989) referred to as role detachment, when I felt like an outsider even though I was an insider. The longer I operated as a member of the AR team to identify

opportunities for change, the more distant and detached I began to feel as a leader within the organization. The practices of reflection and active memoing were important to remain authentic with respect to inner and outer dynamics of holding my multiple roles. The external dynamics pertaining to the roles I played influenced the inner dynamics of how I thought and internalized the conflict (Coughlan & Brannick, 2014).

Throughout the project, I struggled to maintain credibility with the AR team and the Admissions Appeals Committee as an effective driver of change, and as an astute political player with the university leadership. The key was assessing the power and interests of relevant stakeholders in relation to aspects of the project (Brannick & Coughlan, 2007). I did realize that the ability to maintain openness as a member of the AR team, while remaining grounded and focused on the problem as a researcher and politically aware as an organizational leader, was a critical element in establishing the conditions necessary to support this change effort. There were times when I did this effectively, and other times when I did not. I often leaned too heavily on my role as a leader in the institution to get things done, rather than being patient and wrestling through the process. In doing so, I see, in hindsight, that some learning opportunities for others and myself were possibly stifled in the process. It was imperative to embrace the requirements of each role and to learn to use the duality as an asset, not a liability.

Access. Access was a necessary condition for supporting the use of alternative metrics at Lakeland University. Coughlan and Brannick (2014) referred to the level of access I was privileged to have as secondary access. Bartunek (2008) saw this privilege as an outsider role that an insider plays because of the vulnerability this requires on behalf of the organization. I had the ability to access proprietary information and data because of my role within the organization, which was essential to creating a seamless pathway in making the case for this AR study. Having

access to systems like the student information system allowed me to download, analyze, synthesize, and present historical data to Lakeland leadership. The ability to use platforms like Qualtrics to collect data at no cost was also vital. However, even more critical than access to these systems was my access to people.

My access to the members of the AR team, the Admissions Appeals Committee, subordinates, and the PTSs was a central factor in the meeting the conditions necessary for effecting change. Recruiting AR team members with referent and positional power was only possible as a by-product of my access to them. Because of our respective positions, we were in meetings together and we had collaborated with each other on a variety of university initiatives. We had a healthy professional respect for each other, which opened the door for me to present them with the opportunity to serve as members of the team.

The appeals committee was a separate but functional arm of the department I led. The committee operated completely independent of the admissions office, but its role directly impacted the department. As director of the department, I had no direct oversight of this committee, but my positional authority undoubtedly influenced their affability. My role granted me access to this committee in ways that would have been considerably more difficult for someone with less positional authority.

As a part of my professional function as a director, I have access to subordinates whom I refer to as my team. They were key in carrying out the task of physically operationalizing various elements of the project, such as updating and making the modified appeals forms available, creating the PTS Questionnaire in Qualtrics and making it mobile-friendly, and collecting the survey data from the PTSs. Access to this human capital made the process of

operationalizing these tasks manageable since I was able to leverage their time, talents, and abilities.

As the director of admissions, student engagement is a part of my functional role. It is my job to help students, and this role requires access to all student populations. This project was an extension of my functional role. My position within the organization granted me secondary information, which allowed me to explore existing inequities.

In this study, the benefits of access included expediency, avoiding roadblocks, direct channels to exclusive data, and a dedicated workforce. Since this study was conducted as a part of a dissertation, the timeframe was truncated, so the ability to eliminate as many barriers as quickly as possible was paramount. Navigating complex systems as an insider or an outsider without access would have been daunting (Bartunek, 2008). The privilege I was afforded made a tremendous impact and provided foundational support for this change effort.

Summary of Conclusion 2 and Reflective Insights

The findings from this study highlighted the importance of collaboration and including a diversity of new voices in this change effort. During reflection, I found that in addition to collaboration and incorporating new voices, an intimate level of pre-understanding, situating oneself in the duality of multiple roles, and having secondary-level access were important elements in the conditions necessary for supporting the use of alternative metrics in the admissions process for PTSs at Lakeland University. These elements led to very little resistance and made the process of navigating the political terrain extremely manageable. The methodological framework that AR provided, combined with pre-understanding, the effective use of role duality, and access helped to create a predisposition of trust and credibility that

advanced this study. However, leveraging those elements without consistent reflexivity stifled some learning and growth opportunities for all stakeholders.

Implications for Future Research and Practice

This study addressed the need for colleges and universities to look beyond established admissions protocols and consider other factors that may be more indicative of academic success for post-traditional students. The research used Dweck's (1986) implicit theory of intelligence and Duckworth's (2007) philosophy of grit as a lens for viewing non-cognitive methods as part of the admissions process for PTSs. The outcomes of this study have potential implications for future research and practice, especially for colleges and universities seeking ways to grow enrollment and be more inclusive of all student types. However, since this was a context-specific AR study, the results are not generalizable. Therefore, additional studies should explore ways mindset and grit can be applied to the admissions process.

Two prominent implications evolved from this study. First, mindset and grit may have merit in the consideration of PTS applicants. Second, although influential insiders have the ability to progressively move the change process forward, without reflexivity, the integrity of the AR process could suffer. These two implications lay fertile ground for future research and practice.

Implications for Future Research

This research reinforces existing literature indicating that alternative methods have validity in the assessment of a student's success (Duckworth & Gross, 2014; Dupeyrat & Marine, 2005; Dweck, 1986; Elliott & Dweck, 1988; Grant & Dweck, 2003; Hubackova & Semradova, 2014; Naumann, Debora, & Gutkin, 2003; Spitzer, 2000). The two methods explored in this study, mindset and grit, have been studied extensively in a variety of settings. However, to my

knowledge, this is the first study to consider both together as a part of the pre-admission process for any population of students. More research should be conducted in a variety of institutional settings and with multiple subsets of students. The scope of this study could and should be expanded for future research.

While mindset and grit were found to be related to GPA and persistence for PTSs regardless of their admission pathway at Lakeland, these factors/measures should be tested at other types of intuitions and with other categories of students. I chose to exclusively explore the linkage between admission and academic success for PTSs because they represent an unintentionally marginalized group. However, the applicability of mindset and grit should be more widely explored among all types of students, including, but not limited to, dual-enrolled students, college freshmen, and transfer students. Exploring the relevance and impact of these methods in academic settings, such as trade schools, technical colleges, two-year institutions, or private institutions, could contribute significantly to the existing body of literature.

More research is also needed to understand the effect of mindset score and grit score on GPA and persistence. It would be beneficial to better understand the interaction between these variables and to determine if mindset score and grit score can be influenced through programs offered by the school. Mentorship programs, for instance, may be able to improve the grit and mindset scores of students, helping to set them up for future careers. It would also be useful to examine how self-efficacy affects retention and GPA of nontraditional students. While the current study explored the self-efficacy of admitted students, it did not consider how self-efficacy affected the success of those students.

As a part of this project, we modified the admissions appeals form to ask candidates for evidence of grit and a growth mindset, and to provide artifacts as additional data points. The AR

team and the appeals committee co-created a rubric to help systematize decision making and reduce the amount of subjectivity in the process. This was helpful because it created some standardization in the process, and it provided a rationale for why certain decisions were made. Future researchers should look to explore the efficacy of such rubrics.

As a concluding thought regarding implications for future research, the exploration of other efficacy factors should be considered. Isolating factors like age, years of work experience, or professional accomplishments could reveal some interesting findings. A study of intangible non-cognitive factors could be conducted to determine if one factor is more predictive than others.

Implications for Future Practice

One of the most important steps in the AR process is the construction phase, in which stakeholders engage in outlining and validating the issues on the basis of which action will be planned and implemented (Stringer, 2014). Herr and Andersen (2015) suggested that this phase is too important to be an individual venture. “It is important that you as the action researcher engage relevant others in the process of constructing, and are not the expert who decides this apart from others” (Herr & Andersen, 2015, p. 10). I constructed and designed the AR process before selecting an AR team. This decision deprived my team of a crucial—and possibly the most significant—learning opportunity. As a result, the team operated more as consultants and symbolic figures than invested agents of change. Cahill (2007) admonished that researchers must move beyond reproducing relationships of consultation or masked tokenism for an authentic action research experience. In future practice, researchers should include the AR team in the construction phase of the study, which will enhance the learning experience and provide additional depth to the AR process.

“The goals of action research is to deliberately blur the lines of terms such as the *expert*, *participant*, and *research*. We seek authentic collaboration with others invested in constructing knowledge” (Herr & Andersen, 2015, p.150). This study’s findings revealed the importance of collaboration and of incorporating new voices into the change process. This was a revelation that occurred during the process and was not a purposefully designed construct from inception. In future practice, being purposeful and deliberate about creating the environment for meaningful collaboration and inviting people with diverse backgrounds and functional roles could create an even more fruitful learning opportunity. In my reflective insights, I connected pre-understanding, role duality, and access to creating the conditions necessary for supporting the use of alternative methods. While this connection was implied based on my experience as an influential insider, in future practice this type of research should be conducted by outsiders or a combination of insiders and outsiders to assess the merit of the prescribed conditions. While these elements were important at this one institution and in this setting, the exploration of an AR team that is not as entrenched would add significantly to the literature.

This AR team comprised leaders in the system that we were seeking to influence. As a by-product of our positionality and role similarity, the group, unlike the appeals committee, was void of varying viewpoints. Thus, the team design made us more susceptible to groupthink (Choi & Kim, 1999). Future AR teams should be formed with collaborators with varying skillsets, positions of power, and organizational familiarity (Herr & Andersen, 2015).

During this short-term study, mindset and grit showed promise for further exploration in the pre-admissions process. The efficacy of using the PTS Questionnaire with this population of students should be further explored using multiple AR cycles. There is adequate theoretical literature to support the findings of this study, but more empirical data would strengthen their

validity. The AR process could serve as a powerful tool to develop customized protocols at various types of institutions. Implementing this process, utilizing multiple cycles, and bringing together a diverse group of stakeholders at schools that have larger post-traditional student populations has the potential to further transform higher education.

While Lakeland used the admissions appeals process that was already in place, there is a tremendous opportunity for admissions offices to be proactive, as opposed to reactive, in the implementation of alternative methods. Having each PTS share their story, through an essay, and provide other evidence of their ability to succeed in college as a built-in part of the admissions process would provide considerable insights. The evaluation of these essays and artifacts using narrative analysis would honor their tragedies and triumphs, while providing the admissions office with additional data to determine the student's propensity for success. The implementation of the PTS Questionnaire, pre-admission, could be used as a confirmatory tool or as a means to identify students who may be at risk academically.

For those in the leadership and organizational development community, this study demonstrated the value of involving various perspectives in the change process. The learning could have been even more robust had I invited individuals who had no direct ties to the higher education arena to explore the barriers PTSs faced and to contribute to the construction of a solution. The AR team I assembled consisted of leaders within the higher education landscape. The appeals committee, while not designated leaders, represented an extension of the admissions department, and its members were all part of the higher education community. Inviting voices not directly connected to higher education but still possessing a vested interest in the PTS population could generate tremendous learning opportunities and expand the level of creativity around supporting alternative methods for PTSs.

Limitations of This Study

The most significant limitation of the study was that both the design of the AR process and the AR team did not maximize the learning opportunities for the team members. The AR methodology and AR process in general presented challenges for me from the very beginning of my academic journey. As a novice to research in general, I was only broadly familiar with quantitative and qualitative research. While theoretically fascinating, AR's practical applicability challenged my natural desire for clarity and control. I had a low tolerance for the ambiguity and "messiness" that a well-executed AR study requires (Herr & Andersen, 2015).

As a doctoral student, I felt the increasing need to control the time and the pace of the study to fit my graduation goals. Cahill (2007) acknowledged that many doctoral collaborative or participatory AR studies are more pragmatic, with shortcuts taken to fit within the dissertation year. While I do not believe I knowingly took shortcuts, my construction was definitely designed to influence outcomes. I was able to operate largely in a comfortable zone. I studied a familiar topic as a part of a group with which I was comfortable, in a setting where I knew what it took to politically maneuver. This was a *safe* study.

The failure to include the appeals committee, or at least the chair of the committee, more meaningfully during the initial planning stages of the process was a missed opportunity. Most costly was the absence of the committee's voice in answering Research Question 2. When addressing this question, the only voices which I accessed belonged to the AR team. The vantage of the appeals committee would have added value to responses to this question. Indeed, though the committee was an essential group in this study, the members were underutilized.

While the single AR cycle was appropriate for this short-term study, the benefits of multiple AR cycles were not realized. The purpose of the iterative multiple cycles is to transfer

knowledge from one cycle to another. With multiple cycles, possible misconceptions and wrong assumptions can be corrected during the research (Stringer, 2014). Any wrong assumptions could have been identified and discarded in an earlier iteration, which could have led to more productive research. In addition, multiple cycles could have enabled the identification of unexpected sources of change.

Just as the benefits of pre-understanding, role duality, and access was to the expediency of accelerating the change process, the limitation was the sacrifice of deep engagement in a systematic process designed to produce local knowledge. The tactic knowledge that we brought to this study was in many ways advantageous, but, upon further reflection, it could have caused epistemological limitations (Herr & Andersen, 2015). Herr and Andersen (2015) stated, “Unexamined tactic knowledge of a site tends to be impressionistic, full of bias, prejudice, interrogated impressions, and assumptions” (p. 44). Even though the design of this AR study produced very few instances of double-loop learning and no evidence of triple-loop learning, when I departed from Lakeland University in 2019, this evaluation process for PTSs was sustained. Future studies should consider the desired learning outcomes when constructing the AR framework and building an AR team.

Lastly, my reflective insights were all a product of my notes, memoing, and reflections. I only recorded and transcribed the end-of-project interviews with the AR team members. Not having the recordings from each of the team meetings, my presentations to and dialogue with the appeals committee comprised an additional limitation. It is very likely that having access to transcribed recordings could have provided additional insights and more learning opportunities. For future practice, every meaningful meeting and every significant stakeholder interaction should be recorded, if possible.

Final Reflections

The journey to becoming a scholar-practitioner has been one of the most physically, mentally, and emotionally challenging experiences of my life. Action research is demanding in ways I could not have imagined before being immersed in the process. It required me to be more vulnerable than I ever imagined. Theoretically, I understood the concept of AR being “with” and not “on” people. I understood the purpose of reflection of both self and others, but it was not until I was engulfed in this AR study and started the writing phase that I was able to truly embrace it. I understood conceptually that writing this story would require me to become vulnerable and to grow, yet I certainly did not understand that in practice.

If I knew four years ago what an AR dissertation would require, I might have chosen another path. Now that this process is ending, however, this is one time in my life when I am grateful for my ignorance. This experience has changed me. Every class I took in the Learning Leadership and Organizational Development program at the University of Georgia challenged me in a unique and experiential way. Every instructor was intentional about expanding the way I viewed and thought about leadership and change. My major professors continuously required me to stretch, dig deeper, synthesize, extract meaning, and embrace the messiness and uncertainty of AR. I did not always like it, but I am so appreciative of it.

I struggled as a facilitator of change. By design, the AR process forced me to transform my thinking, relinquish control, and allow action research to guide the change process. However, I did not trust the process or my ability to facilitate change; thus, I resisted it and attempted to control the process by selecting the team members. Had I thought more holistically from the beginning of the project, I would have invited the appeals committee to serve as actors in the development of the process, rather than only including them when I could not figure out a way to

bypass them. I am naturally conflict-averse, and that personality trait does not serve one well in an authentic AR study. While at times I did face confrontation, I scripted the plot to reduce the chances for conflict as much as possible. Oftentimes, I relied heavily on my own understanding of how to perpetuate change, when I should have *leaned in* more and embraced the process.

Action research is transformative. I will be a better scholar-practitioner and leader of change because of this process. I now realize how important the AR process is to meaning making, fostering authentic collaboration, and functioning as a learning facilitator. I believe this speaks to the power of AR methodology to privilege inquiry, learning, and action. The goal now is simply for me to use the spirit of transformative learning that I have experienced to extend beyond this project and the issues raised in this study, to my role as a leader. I want to use the tools that I now have to expand creativity, have deeper collaboration, and create environments for learning, growth, and development for myself and others.

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APPENDIX A

ACTION RESEARCH TEAM POST-PROJECT INTERVIEW GUIDE

The purpose of this interview is to gain information about your experience participating in the *Post-traditional Student: Access and Success Action Research Project*. Your reflections will be confidential and be combined with responses from other action research team members to inform this study.

The final product for this study will be a dissertation that will be published as part of my doctoral program requirements. Your responses are important to deepen our collective learning about this project, the process of change at our organization, as well as to help other organizations benefit from effective action research in the future. To that end, I encourage you to speak openly about your opinion and experiences and to provide specific examples, when possible. I expect that this interview will take about 30 minutes to complete.

Now that you have been informed of purpose our conversation and how the information from this interview will be used, would you like to proceed with the interview? Do you have any questions before we begin?

1. How has the experience of working on this AR team affected your way of thinking about working as part of a group and in this way to create a solution for an organization?
2. Describe the most significant impact this project has had on you – professionally and/or personally.
3. What have you learned about yourself during this action research project?
4. How has your participation in this action research group impacted your way of thinking about student selection and retention? What different or new insights did you gain during/from this project?
5. What have you learned about our organization from the work on this project?
6. What other significant observations have you made about this experience?

We've come to the end of the interview. Thank you for your time. Again, do you have any questions or comments before we end?

APPENDIX B
POST-TRADITIONAL STUDENT QUESTIONNAIRE

Name _____

Validation: Must be numeric. Nine whole numbers only. Positive numbers only

Provide your college student ID# (Nine digits. This is NOT your social security number)*

Validation: Must be numeric; must match above.

Please verify your college student ID#

This questionnaire has been designed to learn more about you. There are no right or wrong answers.

Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements by writing the number that corresponds to your opinion in the space next to each statement.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

You have a certain amount of intelligence, and you can't really do much to change it.					

Your intelligence is something about you that you can't change very much.					

No matter who you are, you can significantly change your intelligence level.					

To be honest, you can't really change how intelligent you are.					

You can always substantially change how intelligent you are.					

You can learn new things, but you can't really change your basic intelligence.					

No matter how much intelligence you have, you can always change it quite a bit.					

You can change even your basic intelligence level considerably.					

Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements by writing the number that corresponds to your opinion in the space next to each statement.

1	2	3	4	5
Not much like me at all	Not much like me	Somewhat like me	Mostly like me	Very much like me

_____ New ideas and projects sometimes distract me from previous ones.

_____ Setbacks don't discourage me.

_____ I have been obsessed with a certain idea or project for a short time but later lost interest.

_____ I am a hard worker.

_____ I often set a goal but later choose to pursue a different one.

_____ I have difficulty maintaining my focus on projects that take more than a few months to complete.

_____ I finish whatever I begin.

_____ I am diligent.

APPENDIX C

INSTRUMENTS FOR ASSESSING NONTRADITIONAL CHARACTERISTICS THAT SUPPORT COLLEGE STUDENT SUCCESS

Instrument	Author/Publisher	URL	Factors Assessed	Administration Details
Academic Advising Inventory	Sandor, J. A. and Winston, R. B.	http://www.academic-advising.com/aais-software.html	• academic decision-making • academic majors and courses • exploring institutional policies • personal development and interpersonal relationships • personalizing education • registration and class scheduling • selecting courses • teaching personal skills	• 57 items • 20 minutes • online or hard copy format
Achievement Motivation Profile (AMP)	Friedland, J., Mandel, H., and Marcus, S. (1996); Multi-Health Systems, Inc.	http://www.mhs.com/product.aspx?gr=IO&prod=amp&id=overview	• motivation for achievement • inner resources • interpersonal strengths • work habits	• 140 items • 20-30 minutes • online format
ACT Engage	ACT	http://www.act.org/engage/college-features.html	• academic discipline • academic self confidence • general determination • goal striving • commitment to college • communication skills • social connection • study skills • steadiness	• 108 items • 30 minutes • online format
EQ-i 2.0	Multi-Health Systems, Inc. (2011)	https://tap.mhs.com/EQI20.aspx	• decision making • interpersonal relationships • self-expression • self-perception • stress management	• 133 items • 20-30 minutes • online format
The California Critical Thinking Disposition Inventory (CCTDI)	Facione, P., and Facione, N.; Insight Assessment	http://www.insightassessment.com/Products/Products-Summary/Critical-Thinking-Attributes-Tests/California-Critical-Thinking-Disposition-Inventory-CCTDI	• analyticity • confidence in reasoning • inquisitiveness • maturity of judgment • open-mindedness • truth-seeking • systematicity	• 75 items • 30 minutes • online or hard copy format

Instrument	Author/Publisher	URL	Factors Assessed	Administration Details
College Student Inventory, Form C	Ruffalo Noel Levitz	https://www.ruffalonl.com/college-student-retention/retention-management-system-plus/college-student-inventory	• academic motivation • general coping • receptivity to support services	• 74 items • 20 minutes • online format
College Success Factors Index 2.0 (CSFI)	Hallberg, E., and Hallberg, K.; Cengage Learning	http://www.cengage.com/csfi/	• college involvement • competition • expectations • family involvement • precision • persistence • responsibility/control • task planning • time management • wellness	• 100 items • 70 minutes • online format
Community College Survey of Student Engagement (CCSSE)	Center for Community College Student Engagement	http://www.ccsse.org/aboutsurvey/aboutsurvey.cfm	Provides information on student engagement and assesses institutional practices and student behaviors correlated with student learning and retention.	• 38 items • 45 minutes • hard copy format
Community College Institutional Survey (CCIS)	Center for Community College Student Engagement	http://www.ccsse.org/center/ccis/	Identifies key promising practices, the target student populations of those practices, and the scale at which practices are implemented.	• 117 items • online format
Grit Scale	Duckworth, Angela; Duckworth Lab, University of Pennsylvania (2007, 2013)	https://sites.sas.upenn.edu/duckworth/pages/research	• grit • self-control	• 8 or 12 items • hard copy format
Learning and Study Strategies Inventory (LASSI)	Weinstein, C. E., Palmer, D. R., and Acee, T. W.; H&H Publishing	www.hhpublishing.com/assessments/LASSI	• self-regulation of strategic learning: time management and concentration • skill: information processing, selecting main ideas, test strategies • will: attitude, anxiety	• 60 items • online format
Mindset	Dweck, Carol (2006); Random House	http://mindsetonline.com/testyourmindset/step1.php	Uses a growth-versus-fixed mindset paradigm to assess students' mindset and teach them to develop a growth-based mindset.	• 16 items • online or hard copy format

Instrument	Author/Publisher	URL	Factors Assessed	Administration Details
Motivated Strategies for Learning Questionnaire (MSLQ)	Pintrich, P., Smith, D., Garcia, T., and McKeachie, W.; The University of Michigan	http://stellar.edc.org/instruments/motivated-strategies-learning-questionnaire-mslq	• control of learning beliefs • critical thinking • effort regulation • elaboration • extrinsic goal orientation • help seeking • intrinsic goal orientation • metacognitive self-regulation • organization • peer learning • rehearsal • self-efficacy for learning and performance task value • test anxiety • time and study environment management	• 44 items • 20-30 minutes • hard copy format
Non-Cognitive Questionnaire (NCQ)	Sedlacek, W., and Tracey, T. J.; Jossey-Bass	http://williamsedlacek.info/publications.html	• availability of a strong support person • demonstrated community involvement • knowledge acquired in a field positive self-concept • preference for long-term over short-term goals • realistic self-appraisal • successful handling of the system • successful leadership experience	• 23 items
Perceptions, Expectations, Emotions, and Knowledge about College (PEEK)	Weinstein, C., Palmer, D., and Hanson, G.; H&H Publishing Company	www.hhpublishing.com/_assessments/peek/	Assesses students' expectations about college in terms of three general categories of the college experience: academic, social, and personal.	• 30 items • online format
Study Behavior Inventory (SBI)	Kerstiens, G., Bliss, L., and Marvin, R. (2003); Andragogy Associates	http://www.sc.edu/fye/resources/assessment/essays/Bliss-6.12.03.html	• short- and long-term study behaviors • academic confidence • time management • study reading • general study habits • listening and note-taking • writing • test anxiety • test taking • faculty relations	• 46-items

Instrument	Author/Publisher	URL	Factors Assessed	Administration Details
Student Adaptation to College Questionnaire (SACQ)	Baker, R., and Siryk, B. (1987); Western Psychological Services	http://www.wpspublish.com/store/p/2949/student-adaptation-to-college-questionnaire-sacq	• academic adjustment • attachment to institution • personal-emotional adjustment • social adjustment	• 67 items • 15-20 minutes • hard copy format
Student Readiness Inventory	Le, H., Casillas, A., Robbins, S., and Langley, R. (2005); ACT	https://www.act.org/sri/pdf/UserGuide.pdf	• academic discipline • academic self-confidence • commitment to college • communication skills • general determination • goal striving • social activity • social connection • steadiness • study skills	• 108 items • 30 minutes • hard copy format
SuccessNavigator	ETS	https://www.ets.org/successnavigator/about/	• academic skills • commitment • self-management • social support	• 30 minutes • online format
Survey of Students Assessment of Study Behaviors (SSASB)	Paterra, M. E.; The Cambridge Stratford Study Skills Institute (1991)	http://www.cambridgestratford.com/studyskills/prepost.html	• comprehension • effective test taking • efficient learning tools • high performance writing • positive attitudes • useful work habits	• hard copy format
Transition to College Inventory (TCI)	Callote, J., Pickering, J. W., Zerwas, S. C., and Macera, A. C. (2003); Old Dominion University	http://ww2.odu.edu/ao/ira/assessment/tci/TCI_brochure.pdf	• athletic orientation • college involvement • independent activity focus • influences on college choice • institutional commitment • personal/academic concerns • self-confidence • socializing orientation • student role commitment	• online and hard copy formats

APPENDIX D

ADMISSION APPEAL FORM

UNIVERSITY *Office of Admissions*

Admission Appeal Form

An application for admission must be submitted to **UNIVERSITY** BEFORE your appeal can be considered. All correspondence regarding your appeal will be sent to the address indicated below. Consult Chapter Two of the **UNIVERSITY Academic Catalog** for admission categories and standards. (The catalog is available online at **UNIVERSITY**)

Last Name First Name Laker ID

Mailing Address City State Zip Code

Home Telephone Number Cell Telephone Number Email Date

What is the nature of your appeal? (Check One)

- ☐ I am an applicant seeking admission in the freshman "limited" category.
- ☐ I am an applicant seeking admission to the "vocational only" category.
- ☐ I am a transfer applicant with a cumulative GPA less than 2.00 on previous college work and/or not in good standing at my last institution. (Have you ever attended CSU in the past? ☐ Yes ☐ No)
- ☐ I am an applicant seeking admission as a "Presidential Exception" due to special circumstances.

What semester do you wish to enter **UNIVERSITY** University? _____

What major do you plan to pursue if admitted? _____

Have you applied for financial aid or do you intend to do so? _____

Note: Financial Aid cannot be awarded until you are admitted to the University. It is important to be aware that admission to the University does NOT guarantee that financial aid will be awarded.

Why do you think that you should be admitted to **UNIVERSITY**?

Directions: Submit a signed, dated and typed essay addressed to the Admission Appeal Committee. Your essay should make the case for why you believe you have the potential for academic success at **UNIVERSITY** despite the fact that you did not meet all the necessary requirements for admission. Transfer students must also explain the reasons for previous academic difficulties, indicating why those problems are unlikely to reoccur, and detailing your plans for academic success in the future. You may attach documentation and/or letters of support from those who are familiar with your academic potential as appropriate. Handwritten letters will not be reviewed.

For Office Use Only: Appeal Decision (Circle One): ACCEPTED DENIED If accepted, for what term? _____

Restrictions (if any): _____

Signature: _____ Date: _____

APPENDIX E

MODIFIED ADMISSION APPEAL FORM

 **UNIVERSITY** *Office of Recruitment and Admissions*

Admission Appeal Form

An application for admission must be submitted to  **BEFORE** your appeal can be considered. All correspondence regarding your appeal will be sent to the address indicated below.

<i>Last Name</i>	<i>First Name</i>	<i>Laker ID</i>	
<i>Mailing Address</i>	<i>City</i>	<i>State</i>	<i>Zip Code</i>
<i>Home Telephone Number</i>	<i>Cell Telephone Number</i>	<i>Email</i>	<i>Date</i>

What is your student type? (Check One)

- ☐ I am a **freshman student**
(i.e. recent high school graduate)
- ☐ I am a **transfer student**
(i.e. transferring at least 30 credit hours from another college or university)
- ☐ I am a **nontraditional student**
(i.e. graduated from high school more than 5 years ago and have less than 30 transferrable credit hours)

What semester do you wish to enter  University? _____

What major do you plan to pursue if admitted? _____

Directions:

Submit a signed, dated and typed essay (750 words or less) addressed to the Admission Appeal Committee. The essay must answer the following two (2) questions. You may attach documentation as appropriate to support your appeal. *Handwritten letters will not be reviewed.*

- Other than academic pursuits, discuss a long-term goal that you have established and accomplished. In this essay, please discuss why the goal was important to you, any setbacks or challenges you faced, and the method you used to overcome those challenges.
- Why do you believe you have the potential for academic success at , even though you did not meet all the admission requirements? Discuss the reasons for any previous academic difficulties, indicating why those problems are unlikely to reoccur, and detailing your plans for academic success in the future.

Please provide evidence of other accomplishments (i.e. resume, certificates earned, licenses held, etc.)

After receipt of all appeal materials, the Appeals Committee will review and render a final decision. Please note that the decision of the committee is final.

Revised 3/29/2018

ADMISSIONS APPEALS COMMITTEE DECISION RUBRIC

Decision:	_____ Approve _____ Deny
If approve, reason(s):	_____ Clearly articulated goals _____ Overcame setback and barriers _____ Prior/current professional success _____ Relevant personal successes _____ Earned significant credentials _____ Clear plan to overcome prior academic difficulties _____ Other: _____ _____ _____
If deny, reason:	_____ Test scores below _____ minimum and no compelling evidence why student should be granted a presidential exception. _____ High school GPA too low, and no compelling evidence That student will be successful at _____ _____ Transfer GPA below 2.0, and no compelling evidence that student will be successful at _____ _____ Other: _____ _____ _____
Committee Chair Signature:	_____ Signature _____ Date