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## Understanding directed self-placement as it relates to student persistence and success

Tonya M. Troka

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## ABSTRACT

### UNDERSTANDING DIRECTED SELF-PLACEMENT AS IT RELATES TO STUDENT PERSISTENCE AND SUCCESS

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Increasing college completion rates is important not only for institutions of higher learning, but also for the nation. Success in the first year and persistence to second year are vital to increasing these completion rates. One aspect of the first-year experience is placement into math, reading and writing courses. A majority of college freshman are placed using standardized placement exams that determine if they take pre-college or college-level courses. Directed self-placement (DSP) is an alternative placement method that is being utilized in lieu of standardized placement exams at a small selection of institutions within the U.S.

A secondary analysis was conducted to understand the relationships among DSP, student persistence and success. Specifically, analyses were conducted to understand how previous performance (high school GPA and ACT scores) related to student choice, persistence and success. Participants were from one private Midwestern university (N =

2,760). *T*-tests were conducted and effect sizes were calculated as well as a logistic regression, chi-square test of independence, and an ordinal regression.

The results of the analyses provided evidence that previous performance, specifically high school GPA and ACT score were related to the DSP choice. It was also found that there is a relationship between DSP choice, student success, and persistence in preparatory and college-level writing courses. High school GPA and ACT score were found to be predictors of success in the first writing course. The ACT score was found to not be significantly related to persistence through course, but high school GPA was found to be significantly related. These findings underscored the need to explore alternative methods of placement beyond standardized placement exams.

NORTHERN ILLINOIS UNIVERSITY  
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UNDERSTANDING DIRECTED SELF-PLACEMENT AS IT RELATES TO  
STUDENT PERSISTENCE AND SUCCESS

BY

TONYA M. TROKA  
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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL  
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Doctoral Co-Directors:  
Amy D. Rose  
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## DEDICATION

I dedicate this dissertation to three people who I love with all of my heart: Christopher, Ethan, and Charlotte. You are all I need, always.

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## CHAPTER 1

### INTRODUCTION

Increasing college completion rates is important not only for institutions of higher learning but also for the nation. In the last 25 years the United States has fallen from being ranked first in four-year degree attainment to twelfth (White House, 2015). These concerns regarding college completion and America's rank internationally led President Obama to challenge the country to increase the number of college graduates in order to move the country back into first place by the year 2020 (White House, 2015).

Persistence and success in the first year are vital to increasing college completion rates. Testing college readiness and placement into preparatory or college-level math, reading and writing courses is common to the first-year experience. The majority of college freshmen are placed using standardized placement exams that determine if they should take preparatory (non-credit bearing) courses or college-level (credit bearing) courses (e.g., 100-level or 200-level). The process of standardized entrance exams, standardized placement exams, placement process, and subsequent course performance in preparatory courses has been questioned intensely over the last five years. These concerns have led to calls for reform particularly at the state level (Fain, 2012; Hu, 2015; Reed, 2013; Smith, 2015; Smith, 2016). The reform that is being requested relates to placement methods as well preparatory courses.

## First-Year Experience

Engle and Tinto (2009) found that impacting the first-year experience is one way to increase college completion rates (Engle and Tinto, 2009), which is important because only 26% of low-income first-generation college students return to school after their first year. Research on the first-year experience has focused on the provision of support to students and on the needs of first-generation college students. Increasing the number of students who return after their first year would likely increase the college completion rates (Engle and Tinto, 2009). Additionally, the research on persistence and dropout from postsecondary institutions often focuses on student experiences and their engagement with the institutions (Kahn & Nauta, 2001). Academic experiences during the first year form an important part of this engagement. Additional factors to consider when looking at why students are unable to be successful and persist through the first year include socioeconomic status, previous success in high school, and academic ability (Barnes, Slate, & Rojas-Lebouef, 2010; Byrd & MacDonald, 2005; Conley, 2008).

Although there is extensive research on success in the first year and persistence to second year, no consistent attention has been paid to the placement experience that many students have before they enter a classroom. A majority of students who enter a traditional four-year university complete an entrance exam (ACT or SAT). After admission, depending on entrance exam performance and institutional policies, students may also be required to take additional placement exams. These placement exams are used to determine placement into preparatory or college-level courses. It is clear that understanding the placement process and the affect it has on students in their first year could lead to positive improvements in not only the first-year experience, but also persistence into second year.



## Preparatory Courses

As mentioned previously, many factors affect the first-year experience and a student's ability to persist to his or her second year and, ultimately, through a degree program to graduation. One particular factor that is discussed throughout the literature is how requiring students to take preparatory (developmental or remedial courses) impacts students in not only their first year, but beyond simply that first year.

The differences between the terms remedial and developmental will be discussed further in Chapter 2, but prior to that it is necessary to provide clarity as well as establish appropriate terminology that will be used throughout the remainder of this dissertation. Throughout my research I found that the term developmental is sometimes used interchangeably with remedial to describe first-year non-credit bearing courses. It is important to acknowledge that based on the literature review those terms should not be used synonymously (Arendale, 2005; Paulson & Armstrong, 2010). Within this dissertation the terms developmental and remedial will only be used when they are included in direct quotations from the literature. Instead, preparatory courses will be the term used to describe courses that are considered to be pre-college-level and non-credit bearing. The term preparatory course serves as an umbrella term without requiring assigning additional qualifiers. Definitions of developmental education, preparatory courses, and remedial courses are provided later in this chapter.

The fact that preparatory reading, writing, and mathematics courses do not carry credit toward graduation yet use up financial aid are widely seen as being a factor in drop-out rates, so preparatory courses are a specific target for legislators (Boylan, 1999). Boylan summarized these concerns in his 1999 article: "students, parents, administrators, faculty, and legislators

regularly complain that remedial courses take too long, cost too much, and keep students from making progress toward degrees by holding them in several different levels of noncredit, remedial courses” (p. 2). Colleges have attempted to deal with placement concerns in varying ways, including raising the entrance requirements to only admit students who do not need preparatory courses. Others have begun to look at the placement process itself in the hopes of helping students make better decisions regarding first-year courses. Although much has been written about the first-year experience, specific research on the effect that placement exams and placement processes have on a student’s ability to persist are limited. Those studies that have focused on the success and failure rates of preparatory courses have not specifically explored the impact that using standardized placement exams as the primary method of placement may have on student success and persistence. Furthermore, there is very little in the research that seeks to understand the means of placement can be related to students’ abilities to be successful and persist. Because of the lack of research, it is difficult to determine if the traditional approach of testing students using standardized placement exams and placing them into preparatory courses affects a student’s ability to be successful and persist into credit-bearing courses. Perhaps alternative methods of placement can increase students’ abilities to be more successful in their first year and persist to the second year and beyond.

### Placement Process and Methods

The placement process, which includes placement exams and subsequent placement into preparatory or college-level courses, can impact a student’s first year of college. The concerns regarding student placement are mentioned as an issue throughout the literature on the topic of first-year college experience. Although noting the problem, few studies have looked at

placement or misplacement into courses as key factor for the lack of persistence and success (Bailey, 2009; Bedore & Rossen, 2004; Felder, Finney, & Kirst, 2007; Jones, 2008; Royer & Giles, 1998,).

According to Parsad, Lewis, and Greene (2003), 28% of all college freshmen were enrolled in one or more preparatory courses in 2000. Parsad et al. (2003) explained that, on average, these students spent about one year taking preparatory courses. Other research indicates that more than half the students entering community college are underprepared (Rutschow & Schneider, 2011). Accordingly, the rate of students enrolled in preparatory courses is much higher at community colleges. Estimates of community college student participation in preparatory courses have ranged as high as 70% (Rodriguez, Bowden, Belfield, & Scott-Clayton, 2015).

With more than half of all college freshmen being placed into preparatory courses, a significant portion of students who withdraw from college during their first year are from this population. Generally, the lack of persistence of those students enrolled in these preparatory courses is ascribed to the idea that students in these courses do not have the skills necessary to succeed in college (Bailey, 2009). As mentioned previously, a majority of first-year students are placed into preparatory courses based on standardized placement exams scores. Parsad et al. (2003) found that 57 to 61% of the institutions in their study used a standardized placement exam approach to determine if students need preparatory courses.

The type of placement exams used in colleges and universities across the U.S. to help determine if students need preparatory courses is varied. The ACT and SAT scores can be used for placement and this is a common practice. Institutions also use additional placement exams either as another layer of standardized testing or in lieu of using ACT or SAT scores. Two

common standardized placement exams used by institutions outside of ACT and SAT scores are ACCUPLACER and COMPASS. While both of these exams are fairly common neither of them test other factors and skills beyond content. Boylan (2009) argued that student success depends on other factors in addition to content mastery. Barnes, et al. (2010) agreed, indicating “academic preparedness is one piece of the college-readiness puzzle, but college ready is more than college eligible” (p. 19). Other key factors include attitudes toward learning, motivation, autonomy, and willingness to seek help (Sedlacek, 2004). This position has inevitably led to a reassessment of the ways that colleges define readiness and, in particular, how course readiness is measured. Additional aspects of this reassessment have focused on changing the curriculum and course sequencing structures (Bailey, 2009). Bailey (2009) suggested a more individualized approach to assessment and placement. Boylan (2009) also encouraged alternative approaches to assessing students for placement. He discussed concerns with the lack of depth in the standard placement exams as they only assess cognitive skills while a student’s ability to be successful is based on multiple factors, both cognitive and non-cognitive. These non-cognitive skills are critical according to Boylan (2009) and can help predict future likelihood of success.

Prior to using standardized placement exams, many universities designed their own exams to assess and place students. These alternative placement exams are often designed to align with the curriculum in order to test students’ understanding of the desired programmatic outcomes at each university and to accurately place students. Sullivan and Nielsen (2009) stated that the term accurate placement “is frequently used in assessment literature and in informal discussions about placement practices” (p. 6). However, they also stated that “the term has been very hard to define, and it may ultimately be impossible to measure” (p. 6). It is difficult to determine if alternative methods are successful and if they can be deemed accurate. Studies have

yielded inconclusive results due to the fact that there is little research that helps understand the efficacy of these alternative methods (Cederberg, 1999; Cohen, Friedland, Kelemen-Lohnas, & Elmore, 1989; Krawczyk & Toubassi, 1999). The majority of the research focuses on the nationally normed standardized entrance and placement exams.

Directed Self-Placement (DSP) is one such alternative placement method. During the DSP process students are presented with information about their course choices by an advisor and are allowed to make their own decisions about placement. This is an informed decision based on their previous performances and the course options. Students may select to take the preparatory course or college-level courses. In order to facilitate informed decision making, the college provides a counselor to support and provide information to students. This placement practice was introduced by Royer and Gilles in 1998. Other researchers/universities (Bedore & Rossen-Knill 2004; Felder, Finney, & Kirst, 2007; Gere, Aull, Green, & Porter 2010; LeBlanc & Painchaud, 1985; Reynolds, 2003) have also explored versions of DSP as an alternative approach to both standard and alternative placement exams.

Royer and Gilles (1998) studied one university's use of DSP: the approach by that involved new students meeting with the director of composition to self-select either the preparatory or college-level writing courses. Royer and Gilles (1998) maintained that this approach was successful by reasoning that if no students had chosen to take the preparatory writing course, then DSP would have to be considered a failure. However, about 20% opted for the preparatory writing course each year. In fact, Royer and Gilles (1998) found that the DSP placed about the same number of students into the preparatory course as the standardized placement exam did, with 22% of students placing into the preparatory writing course.

Royer, Rhodes, Guevara, and Lecker (2012) completed an informal qualitative study where they interviewed students to discuss their experiences with DSP after selecting and completing the preparatory writing course. This unpublished study found that students felt that they had increased their confidence by completing the preparatory writing course. I conducted a secondary analysis utilizing a sample from the same academic year. This dissertation study specifically looks at the effectiveness of DSP as measured by student persistence and success in the preparatory and college-level writing course.

#### Statement of the Problem

Directed self-placement (DSP) has been studied by looking at the student confidence level after preparatory course completion as well as overall student perception of the placement process (Royer & Gilles, 1998; Royer, Rhodes, Guevarra, 2012). Yet, while we know that the students have positive perceptions of the DSP process, there have been no studies to understand effectiveness in terms of persistence and success.

#### Statement of the Purpose

The purpose of this study is to explore the relationships among DSP, student persistence and success specifically in one preparatory and one college-level writing course. In this study, I conducted a secondary analysis of data collected by Royer (2012) in order to explore the effectiveness of this alternative method of testing used to place students into either preparatory or college-level writing courses.

## Research Questions

1. How does previous performance as indicated by ACT score and high school GPA relate to students' choices in the DSP process?
  - a. Is there a difference in the mean ACT scores among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?
  - b. Is there a difference in the mean high school GPA among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?
  - c. Does ACT score and high school GPA predict a student's choice to take the preparatory writing course or the college-level writing course?
2. How does previous performance measured by ACT score and high school GPA relate to students' persistence (course completion) in the college-level writing course?
  - a. Is there a difference in the mean ACT scores between students who persist through the course by completing the course with a passing grade and those who did not persist and received an F or W grade?
  - b. Is there a difference in the mean high school GPA between students who persist through the course by completing the course with a passing grade and those who did not persist and earned an F or W grade?
  - c. Do ACT score and high school GPA predict persistence?
3. How does the DSP choice relate to student success in terms of course persistence?
4. How does the DSP decision relate to student success in terms of course grade?

- a. Is there a difference in the mean writing course grade among students who chose to take the college-level course without taking the preparatory writing course and those who chose to take the preparatory writing course first?
- b. Does DSP choice predict student success in the course they select to take first?

### Significance of Study

Improperly placing students into preparatory courses may ultimately influence their likelihood to be successful and persist through a degree program to graduation. Students may be required to take additional courses based on traditional placement methods and end up paying more in tuition and spending more time completing course work. A common understanding among educators regarding student retention is that students are most vulnerable at the beginning of their degree programs. Moreover, it is possible that students do not receive proper placement into courses based on their exam scores, since even the most popular methods of testing and placement have their flaws. Scott-Clayton and Belfield (2014) noted that “roughly one in four test-takers in math and one in three test-takers in English are severely misassigned under current test-based policies, with misassignments to remediation much more common than misassignments to college-level coursework” (p. 4). The flaws in the assessment, coupled with the inconsistent processes used to test and place students, are ongoing concerns in higher education. According to Rutschow and Schneider (2011), “there is strong and growing effort among educators and policymakers to address the need of these students; however, the available research on effective practices is limited in its rigor and reliability” (p. 1).

By testing and placing students into preparatory courses using only standardized exams, higher education institutions are ignoring the fragile state of this student population. The



traditional placement process requires students with low confidence to take exams that confirm their abilities or inabilities in order to place them in courses they are not interested in taking and expect them to succeed and persist into their second year. A change in placement testing and the process of placement is necessary. One alternative approach to the traditional placement model is DSP, allowing students to make their placement decisions after providing them with information to guide them. This alternative method provides a more nurturing experience that may lead to increased likelihood of success and persistence.

Additional research on alternative placement methods such as DSP and its impact on student success and persistence can offer further insight. This study seeks to understand the effectiveness of an alternative placement method and the student success and persistence rates of these students using quantitative measures.

### Overview of the Study

This dissertation includes five chapters. Chapter 1 includes an introduction, problem and purpose statement, as well as research questions. Chapter 2 is a review of the literature. Chapter 3 includes the methodology of the study. Chapter 4 introduces the results of the study by reviewing the analyses that were conducted. Chapter 5 discusses the findings of the study and provides implications for practice and future research.

### Delimitations

This study is delimited by the fact that it is a case study focused on the placement process at one institution. Placement methods vary across institutions and DSP, as will be discussed in Chapter 2, is not a method that is being used widely at this time. Because of the various

placement processes and the lack of access to other institutions which may be employing similar placement methods, this study takes a closer look at DSP of one case study.

An additional delimitation is the fact that this is not a controlled experiment and other factors may affect both success and persistence. Success or failure in both the preparatory and college-level courses can be impacted by factors such as previous performance in high school, socioeconomic status, and various personal issues.

### Definitions of Terms

College-level course: Within this study the term college-level course refers to a course that is not considered to be developmental, remedial, nor preparatory and that earns credit towards a degree program.

Developmental: Developmental programs go beyond preparatory courses and offer students tutoring, learning laboratories, and various forms of individualized instruction (Boylan, 1999). For the purpose of this study the term developmental course is used only in direct quotations from the literature.

Directed self-placement (DSP): Directed self-placement is a placement method used for new students. This method provides the student with information about the preparatory or college-level courses available and allows students to place themselves into the courses they feel are the best fit for their skill levels.

Persistence: The use of persistence in this study signifies an alternative to retention. This term refers to the completion of a course. For the research questions persistence is measured by course completion with a grade of A-D.

Preparatory course: This term is used to describe any non-credit bearing course that is offered to college students in an effort to prepare them for the credit bearing course(s).

Remedial course: The basic definition that is offered for the term remedial course is a non-credit bearing course that teaches prerequisite skills for the credit bearing course that will follow. For the purpose of this study the term remedial course is used only in direct quotations from the literature.

Student success: Student success can be defined in many ways depending on who is defining it. For the purpose of this research student success is defined as completing the course with a passing grade (A-D).

### Chapter Summary

This chapter began by introducing the aspects of both first-year courses and course placement and briefly explained how this can affect student success and persistence. The problem statement explained that there has been little research completed to understand how DSP relates to student success and persistence. It was explained that the purpose of the study is to explore the relationships among DSP, student persistence and success specifically in pre-college and college-level writing courses. Four main research questions were introduced. The significance of the study was reviewed and emphasized the importance of proper placement into first-year courses. The delimitations of this case study were explained. Finally, definitions of key terms were provided.

## CHAPTER 2

### LITERATURE REVIEW

This dissertation study focuses on understanding the effectiveness of one alternative placement method for first-time college students. In preparation for the study, literature was reviewed in key areas that relate to the first-year student experience. Specifically, these include college readiness, measurement of college readiness, preparatory courses, first-year retention, and persistence to second year. This chapter presents this literature review and outlines how this dissertation study is designed to contribute to the literature surrounding the first-year college experience by specifically focusing on the student placement process.

#### Placement Activities as Part of the First-Year Experience

Prior to starting college and part of the first-year experience includes completing standardized entrance exam(s) (ACT and/or SAT), then, depending on performance, taking subsequent placement exam(s) (also standardized) and being placed into preparatory or college-level courses. The goal for students who are pursuing a degree is to complete the first year and persist to their second year. As reported by *U.S. World and News Report* (2016), one out of three first-year students do not return to their second year. It will be nearly impossible to increase college completion rates in the U.S. without improving the first-year experience. It is necessary to understand this experience fully in order to determine ways to improve the first-year experience and increase the persistence rate to the second year.

## College Readiness

It is important to review and understand the literature on college readiness as much of what happens during the first year is determined based on measuring college readiness. Much of the literature surrounding college readiness falls into two main categories. The first category of research addresses the role that secondary education plays in preparing students for college. This body of literature introduces and examines the role of secondary education teachers and administrators, as well as the role of parents in preparing high school graduates for college-level work. The second main category of research approaches readiness from the angle of the legislation that has attempted to increase the number of high school graduates who are college ready upon graduation. The research in this category discusses how the U.S. government has influenced the changes in policy to impact public schools throughout the years dating back to 1983. The major focus of both categories of research is dedicated to traditional-age college students as opposed to adult students entering or re-entering colleges. Although both categories are important, it is important to note that for the purpose of this study the focus will be on understanding readiness from the perspective of post-secondary institutions.

What does it mean to be college ready? This is a question often posed by leaders at colleges and universities, as well as state boards of higher education, across the country. A few of the various definitions are discussed in order to understand how readiness is couched within the literature from the post-secondary education perspective. Conley (2008) defined college readiness as “the level of preparation a student needs in order to enroll and succeed, without remediation, in a credit-bearing general education course at a postsecondary institution that offers a baccalaureate degree or transfer to a baccalaureate program” (p. 4). Conley (2008)

further explained that success is not just passing the course, but learning enough in the course to feel prepared to start the next level course. This definition emphasizes readiness for college-level credit-bearing courses. Conley (2008) expanded this definition by discussing other factors that are important in terms of readiness. These are summarized as the ability to understand the college culture, critical thinking skills that allow a student to solve complex problems, ability to understand context within the classroom, and overall ability to adjust to college living. Later in this chapter, specific types of readiness measurement instruments are introduced and discussed. The ability of these exams to measure readiness also is reviewed.

Barnes et al. (2010) expanded on Conley's (2008) definition stating "academic preparedness is one piece of the college-readiness puzzle, but college-ready is more than college-eligible" (p. 19). Harvey et al. (2013), in their literature review regarding college readiness focusing on SAT and ACT scores as predictors of college success, also defined college readiness as having the skills necessary to enroll and be successful in college-level credit bearing courses. Additionally, college readiness is defined differently among the states within the U.S. Twenty-four states specifically list career and college readiness as a line item that is measured and reported on for their accountability report cards (Education Commission of the States, 2016). A review of these report cards indicates that the way in which readiness is being defined and measured varies within the state itself depending on the individual school. Although there are various definitions of college readiness prominent in the literature and that are being used throughout the country, Barnes et al. (2010) believed that the definition of college readiness needs further explanation. They explained there is "an important distinction between the terms of college-readiness and academic preparedness" (p. 2). They go on to clarify by stating that the distinction goes beyond terminology. They believed that each term (academic preparedness and

college-readiness) is indicative of the skills that a student possesses. They went as far as saying that college readiness, as currently defined and utilized in the field, does not represent what a student needs to be successful in college. Barnes et al. (2010) contended that the term academic preparedness should replace college readiness. Conley's (2008) model creates a foundation for how readiness can be approached by students, secondary educators and administrators, post-secondary educators (especially those overseeing enrollment and placement), and companies like The College Board and ACT.

As they are so closely tied to college readiness within the literature it is necessary to discuss the differences between remedial and developmental education. There is a vast amount of literature dedicated to understanding remedial and developmental courses and programs. It is important to note these two terms among the many that are used to describe preparatory courses or course work that strives to impact college readiness. Throughout the literature the term remedial is often used to describe the lack of cognitive/learning skills focusing on the student (Arendale, 2005, Paulson & Armstrong, 2010). As one of the most commonly used terms to describe students needing preparatory course work, it is the preferred term used by the U.S. Department of Education (Paulson & Armstrong, 2010). Although the terms are oftentimes used interchangeably, developmental is also quite often used as the positive description and as a contrasting term to remedial. The use of the term developmental education emerged in the 1970s (Arendale, 2005). The National Association for Developmental Education's (NADE) website offers a definition for developmental education that goes beyond just one type of course work which is mainly remedial. The NADE defined developmental education as a field of practice that promotes learning for students at any level (NADE, 2009). Overall developmental education goes beyond offering preparatory courses by encompassing courses and all services

that focus on helping students develop both cognitive and non-cognitive skills in order to increase success.

According to Arendale (2000), “developmental education is the fastest growing academic component of postsecondary education today.” (p. 1). He believed that the needs of those entering college are diverse and will continue to change over time. This is confirmed by the research offered previously in this chapter. The developmental needs that Arendale (2000) discussed go beyond initial preparatory courses. He referred to developmental program offerings as “noncredit academic enrichment activities such as tutoring, supplemental instruction, learning strategy workshops, or similar activities; students of any classification who enrolled in developmental courses in science and other content areas not covered by the survey” (p. 1). Although this article was written in 2000 his main points are still relevant today because nothing major has taken place in terms of change to how we assess college readiness and intervene to address readiness concerns.

As in previous decades, a large number of students enter their freshman year of college lacking the skills necessary to succeed. The non-profit assessment organization ACT, Inc. reported in 2010 that only 24% of the high school graduates who took the ACT test met the benchmarks in all four subjects: English, reading, math and science. While another 28% of those tested did not meet any of the four benchmarks. The ACT defines the benchmarks as

scores on the ACT subject-area tests that represent the level of achievement required for students to have a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in corresponding credit-bearing first-year college courses. (ACT, 2016b)



Despite having specific admission criteria across universities many institutions still enroll students who lack the basic skills to succeed in college. This fact is especially true for institutions with open enrollment policies. Methods to assist students who are not fully ready for college are becoming a larger factor within higher education as more and more students are choosing to enroll in college courses. From 1997 to 2007 the number of students who enrolled into degree-granting institutions increased by 26%, and the number of students enrolled increased from 14.5 million to 18.2 million (NCES, 2007). For students who are required to demonstrate readiness either by providing standardized entrance exam score(s) or by taking a placement exam, the entrance exam(s) are just the first step(s) in the process. Once the exam is completed, the intervention or interventions that follow vary widely across institutions.

### Measuring College Readiness

Despite the complexity of college readiness, the tools that are used to measure readiness are fairly consistent across higher education. The review of the literature regarding readiness indicates that there may be a need for a varied approach for how readiness is measured given that it is a complex concept that includes many factors. Prior to discussing specific instruments used to measure readiness it is important to understand the context for which both standardized entrance exams and placement exams (which are most commonly administered as standardized exams) are utilized throughout the U.S. in higher education. This understanding will provide a broader context of current practices and concerns with those practices across the field. Although many institutions place a great deal of emphasis on standardized entrance exams, others do not use them at all or only in rare cases. According to *Fair Test: The National Center for Fair and Open Testing* (2009), more than 815 bachelor degree granting colleges and universities in the

U.S. do not require applicants to submit standardized entrance exam (ACT or SAT) scores in order to apply for admission.

For the purpose of this discussion, it is important to distinguish the differences between standardized entrance exams and placement exams. Standardized entrance exams are defined as tests that are offered primarily to high school students and completed during their junior or senior year (College Board, 2016a). Students typically send the scores from these exams to colleges and universities as part of the admission process. Placement exams, which can also be standardized, are utilized after enrollment in an effort to accurately place students into courses based on the student's results on the exam.

The major instruments reviewed for this study are the two most commonly used standardized entrance exams, the SAT and ACT, as well the two most popular placement exams ACCUPLACER and COMPASS. These instruments are reviewed in the sections that follow.

### Standardized Entrance Exams

Standardized entrance exams are defined as tests that are offered to mainly to high school students and completed during their junior or senior year (College Board, 2016a). Students typically send the scores from these exams to colleges and universities for admission purposes. Placement exams, which can also be standardized, are utilized after enrollment in an effort to accurately place students into courses based on the student's results on the exam.

The SAT is offered by the College Board, an organization in existence since 1900. The SAT was introduced as an alternative to the College Boards, beginning in 1926 (Atkinson & Geiser, 2009). According to The College Board's website, the SAT exam tests students on what

they have learned in high school, as well as their ability to apply their current knowledge. In 2015, nearly 1.7 million high school graduates took the SAT entrance exam (Anderson, 2015).

The American College Testing Program (ACT) was created in 1959 by E. F. Lindquist. The assessment is now known as the ACT college readiness assessment (ACT, 2016a). The ACT tests general education abilities of high school students and, according to its 2010 annual report, is able to assess a student's ability to complete college-level work. In 2015, 59% (1.94 million) of all high school graduates took the ACT (ACT, 2015). The ACT exam results are accepted by colleges and universities in the U.S. as part of the application process (ACT, 2015).

### Placement Exams

Colleges and universities across the U.S. use placement exams to help determine whether students need preparatory courses. According to Parsad et al. (2003), between 57 and 61% of all institutions used a placement exam approach. Boylan (2009) discussed the methods universities use to place students, and the most common instruments used are ACCUPLACER and COMPASS (p. 14). In 2000, 75 to 82% of all institutions required students to enroll in preparatory courses once it was determined by their placement exam scores that remediation was necessary. Additionally, most institutions (82-88%) have restrictions on the courses students can register for based on completion of preparatory courses (Parsad et al., 2003).

The ACCUPLACER is a standardized placement exam used to test students' knowledge in math, reading, and writing (The College Board, 2016b). The College Board (2016b) reported that more than 7.5 million ACCUPLACER exams are taken each year at more than 1,500 institutions. The use of this exam varies by university, but generally the score helps determine

what course level students place into and also serves as an aid to students as they select their courses on their own or with a school counselor.

The last specific readiness measurement instrument that is important to review is COMPASS, which is administered by ACT, Inc. The subjects that the COMPASS exam assesses are the same as ACCUPLACER. This test is also adaptive and the score helps to place students into courses. The number of students taking the COMPASS exam has been on the decline since 2012 (Fain, 2015). Nearly 2.2 million students were assessed with this exam in 2012, 1.9 million in 2013, and 1.7 million in 2014.

Beyond ACCUPLACER and COMPASS there are other varieties of instruments that measure college readiness throughout the country. There is a group of Ability to Benefit (ATB) exams. These are exams that are approved by the U.S. Department of Education as readiness assessments for students who are entering community colleges without a high school diploma. Students who seek financial aid for courses are required by the U.S. Department of Education to take one of these exams (varies by school) and earn a passing score in order to receive federal funding. There are currently 10 approved ATB tests, with ACCUPLACER and COMPASS among the 10 that are approved (U.S. Department of Education, 2016).

### Concerns Regarding Readiness Measurement Instruments

Now that the most common instruments have been introduced, it is necessary to review the concerns with using these instruments to measure readiness and make placement decisions. Specific concerns regarding the instruments that are utilized to measure readiness are discussed throughout the literature on academic readiness. Many students are determined college ready based on the scores they earn on standardized entrance exams (ACT/SAT); these exams limit the

ability to predict success fully because they only measure academic aptitude and test taking ability. Even though these exams are limited, they are utilized across the country as a way to measure college readiness, admit students into college, and sometimes to place students into preparatory or college-level courses. Atkinson and Geiser (2009) reflected on the history of admissions tests in an effort to understand the evolution of standardized exams, starting with the College Boards in 1901. They introduced the idea that despite the changes that have occurred throughout the evolution of admissions testing, there is still much work to do and it is possible testing impedes the educational purpose of higher education instead of advancing it. Another concern Atkinson and Geiser (2009) discussed is the fact that the testing companies have too much sway on colleges and universities. The College Board (SAT) and ACT, Inc. are the two major agencies that offer testing for students. This is a concern considering the fact that nearly all students who will apply to a four-year institution are required to take either the ACT or the SAT exam.

Concerns regarding testing bias are also fairly prominent throughout the literature surrounding standardized entrance exams. Although this literature is rich and offers a lot of insight, specific research studies that discuss the biases of placement exams are limited. Even though there is not a great deal of literature that discusses these concerns in regards to placement exams specifically. It is appropriate to introduce pieces of research surrounding the ACT and SAT. These standardized entrance exams are created by the same agencies that administer the vast majority of placement exams that are offered.

There is significant research specific to the ACT and SAT related to how fair these tests are for minorities. The main discussion indicates that minority students are often impacted because of the secondary schools that they have attended. Darling-Hammond (1998) highlighted

this concern when she wrote “educational outcomes for minority children are much more a function of their unequal access to key educational resources, including skilled teachers and quality curriculum, than they are a function of their race” (p. 28). Successful performance on these exams is often an insurmountable task for these students, especially those who live in an economically challenged area where their access to education is limited by their geography. According to Darling-Hammond (1998), two-thirds of minority students attend schools in inner cities with mainly other minority students. These schools are funded at a much lower level than schools located in suburban districts. The schools that teach mainly minority students are most likely to have larger classes, lower quality curriculum and materials, as well as fewer qualified teachers (in terms of credentials) (Darling-Hammond, 1998, p. 30). All of these factors can impact students’ abilities to not only be able to do well on a standardized exam, but also their likelihood to be ready for college-level work. Atkinson and Geiser (2009) also briefly addressed the issue of low-income and minority students’ abilities to compete for college admission and how it is impacted by the standardized exams despite attempts to mitigate biases. Since standardized entrance and placement exams can be biased for minority students, using an alternative method to place students may have a positive impact on this vicious cycle for these students in particular.

Additional concerns regarding standardized exams, specifically those used to determine college readiness, have been raised by Barnes et al. (2010). They cautioned that these standardized exams only test on academic content focusing on cognitive factors, ignoring non-cognitive factors entirely. By testing students only based on academic content and test-taking skills, standardized entrance and placement exams are not getting the full picture of students’ abilities and “academic preparedness is one piece of the college-readiness puzzle, but college

ready is more than college eligible” (Barnes et al., 2010, p. 19). Based on Conley’s (2008) definition of college readiness and the literature review, it is apparent that there are concerns that traditional standardized exams do not test for all the skills necessary to be successful in college-level courses. Conley’s (2008) Facets of Readiness Model includes English, math, science, social studies, world languages, and arts. Placement exams generally assess students’ skill levels in reading, math, and English, but do not include social science, science, world languages, or arts. Behrman and Street (2005) recommended, based on empirical evidence, that a content-specific reading test be given to students to aid in course placement. Study skills are also included under academic behaviors in Conley’s (2008) college readiness model. These skills include managing time, managing stress, task prioritizing, communicating with faculty, note taking, etc. None of these factors are currently assessed in standardized entrance exams or in the most common placement exams.

Similarly, Boylan (2009) believed that both ACCUPLACER and COMPASS are fairly accurate at determining the cognitive skills that they are testing, but they fail to test other factors and skills that he also considered essential to a student’s success. These factors and skills include attitude toward learning, motivation, autonomy, willingness to seek help, etc. (p. 14). Boylan (2009) also introduced other factors that educational researchers agree impact a student’s ability to succeed. Some of the factors he discussed are the amount of time the student has to dedicate to attending class and doing homework, eligibility for financial aid, and other non-school related responsibilities. Boylan (2009) argued that all factors including cognitive, non-cognitive, and personal should be considered when placing first year students.

The COMPASS, as discussed previously, is a popular instrument used for placement among colleges and universities. The research conducted on COMPASS, however, has garnered

mixed results. Two specific studies had contradicting results. Barr, Rasor, and Grill (2002) found that COMPASS scores had either very little, non-existent, or negative correlation to final course grades in the courses that students were placed in based on the scores. They recommended discontinuing the use of COMPASS or only use the results in order to advise, but not to place, students. Mellard and Anderson (2007) also looked at the correlation of COMPASS scores and final course grades and found there was adequate correlation. The ACT, Inc. does not offer a comprehensive report that correlates similar factors.

In June of 2015 ACT announced the elimination of COMPASS by the end of 2016. The decision to eliminate this exam was based on multiple factors. The ACT explained that the test has limitations in terms of determining college readiness (Fain, 2015). The ACT is exploring alternative assessment methods that include both cognitive and non-cognitive factors to assess readiness in anticipation of the elimination of the COMPASS exam. Prior to an alternative exam being created, tested, introduced, and implemented, many institutions will be required to consider alternative approaches to placement in lieu of COMPASS.

The results of studies attempting to understand effectiveness of ACCUPLACER are more positive than COMPASS but still indicate concerns. The College Board tested and reported on the placement validity of ACCUPLACER in 2009 and indicated that there was a moderate to strong relationship between test scores and course grades (Mattern & Packman, 2009). It is difficult to validate the content within these placement exams because exams such as ACCUPLACER and COMPASS do not align to a specific curriculum. A different study conducted by Saunders (2000) examined entry-level assessment and efficacy of placement practices for entry-level writing courses by measuring the relationship between student test scores and grades. This study also sought to determine if there was a correlation between



placement decisions and student demographics such as age, gender, and race. Saunders's (2000) findings overall were inconclusive, but interestingly this data show the placement recommendation that was made based on the ACCUPLACER results was appropriate and students were placed in courses that aligned with their academic abilities. This study found that gender was not an indicator of academic success based on this population. Despite the fact that gender was not perceived as an indicator, race appeared as a significant predictor of academic success. The number of African American students who were enrolled in the entry-level course was higher and, on average, these students performed significantly lower than other racial groups. Passing rates were as follows: African American students 50%, Caucasian students 66%, Hispanic students 66%, and other students 72%.

Another evident concern with the placement exams arises from the utilization of placement exam scores. Placement exam scores are used to develop a recommendation for placement at some schools while others strictly use cut scores to make placement decisions. Many, including Atkinson and Geiser (2009), have offered specific methods to improve standardized placement exams in order to better align with predicting achievement. The solution to improve placement and student experience may not be to revise current placement exams, but instead to create new alternatives that meet the needs of the individual institution. Studies have been completed in an effort to understand if standardized entrance exam scores (ACT and SAT) are helpful in measuring preparedness in certain subject areas. One specific study conducted at Northeastern University by Foley-Peres and Poirier (2008) sought to determine if the SAT math scores or the internally created math assessment scores were better indicators for placement into math courses. The authors concluded that based on the data they collected and analyzed, SAT

scores were not the best indicators to determine course level. These results offer further evidence that using SAT score as the only tool to determine course placement is not effective.

Many institutions require students to take placement exams after admission in order to determine course placement. There are many different reasons to utilize placement exams even when students complete entrance exams. Typically, schools will administer placement exams to students whose standardized entrance exam scores are either too low or unknown. Students are admitted to institutions despite having deficiencies in a subject area. Placement exams allow colleges and universities to assess the academic aptitude of students in specific content areas. Placement exams also are used at some institutions that do not utilize standardized entrance exam scores as a means of determining admission. Behrman and Street (2005) argued that the true intent of “placement testing is to predict whether or not a student will be successful in credit-level course work” (p. 6). Although this is the intent of placement exams, research has found that placement tests are not accurate predictors of college performance. Belfield and Crosta (2012) specifically looked at community college student data and found that high school GPA is a better predictor of college performance, and they advocated for replacing placement exams with high school GPA to reduce the placement error rates. These results, in combination with the literature reviewed regarding standardized exams, indicate there are major concerns with these exams. This underscores the need to research alternative approaches to placement that include multiple factors beyond standardized exam scores.

#### Traditional Placement Process

The most common placement process that students go through consists of either using standardized entrance exam scores to make placement decisions or using the process of

administering placement exams with cut scores for specific courses. Typically, institutions will administer placement exams to students whose standardized entrance exam scores are either too low or not available. Students are admitted to institutions despite having deficiencies in a subject area. Placement exams allow colleges and universities to assess the academic aptitude of students in specific content areas. Behrman and Street (2005) discussed the true intent of placement by stating “placement testing is to predict whether or not a student will be successful in credit-level course work” (p. 6). Based on their placement exam score, students are either placed in preparatory or college-level courses. Now that the traditional placement process has been reviewed alternatives to the traditional practices can be discussed.

#### Alternative Placement Exams and Approaches

LeBlanc and Painchaud (1985); Reynolds (2003); Bedore and Rossen-Knill (2004); Felder, Finney, and Kirst (2007); and Gere et al. (2010) have also explored versions of DSP as an alternative to standardized entrance and placement exams with mixed results. One specific example is a portfolio option at Lewis and Clark College. The portfolio option, as described by Syverson (2007), requires the applicant to submit writing examples and recommendations that are used in lieu of SAT or ACT scores. Schools that consider themselves truly test optional for admissions include Bates College, Bowdoin College, and St. John’s College. These colleges have allowed students the option to not have their test scores evaluated as part of the admission process for more than 20 years. The hope of these colleges is that by making it optional to have the ACT or SAT score included as part of the admission evaluation, it deemphasizes the importance of these scores (Syverson, 2007).

A recent example of a state adoption of an alternative placement method took place in Florida in the 2014-15 school year. New legislation allowed state school students to make choices about taking preparatory courses. The results have not been positive. Miami-Dade College reported not only a reduction in the number of enrollments in preparatory courses, but also an increase in failure rates in both English and math college-level courses (Smith, 2015). Student enrollment in college-level math increased by 30%, and the English course enrollment rose by 10% at Miami-Dade (Smith, 2015). Smith's (2015) article indicated that many of the students who selected to take credit bearing courses were advised to take the preparatory course. Admittedly, this alternate approach has flaws, and the institutions are investigating ways to improve the effectiveness of allowing students to choose (Smith, 2015). This example is included in this literature review for two main reasons. First, it is a recent example that was implemented widely across all state schools in Florida. Second it is a comparable example to the dissertation study that is being presented here.

One study by Rueda and Sokolowski (2004) found that students who took the course based on their alternative placement approach's recommendation or an easier course performed better than those who took a higher level course than recommended or did not take the placement exam at all. The authors were encouraged that 80% of the students succeeded in the courses with grades of C- or higher (p. 32). The results of this study indicated to the authors that the placement exam was effective. Overall, Rueda and Sokolowski (2004) indicated that the results of their study validated their math placement exam and they believed that "a well-designed in-house placement test geared towards our curriculum is a simple and powerful tool for placing incoming students in an appropriate mathematics course" (p. 32).

Reynolds (2003) looked at writing self-efficacy specifically as it relates to DSP. The question Reynolds (2003) attempted to answer in her article is whether students can accurately assess their writing ability. The answer she found through review of the research is yes. The DSP choices made by the students aligned with the results they have in the selected courses. Reynolds (2003) concluded that DSP is a cost and time efficient alternative to standardized exams when it is used for writing specifically. Reynolds (2003) stated that “from a theoretical and empirical standpoint, DSP is quite possibly the best writing placement mechanism” (p. 100).

Nearly all the research on DSP is specific to placement into writing courses. There are very few other research studies that have been conducted specifically on placement exams, and a majority of available literature focuses on standardized exams. This lack of research is likely the result of how complicated it is measure readiness in order to place students accurately. Sullivan and Nielsen (2009) addressed this concern by stating that the term accurate placement “is frequently used in assessment literature and in informal discussions about placement practices. However, the term has been very hard to define, and it may ultimately be impossible to measure” (p. 6). The authors wrestled with the concept that accurate placement is operationally defined as the student passing the course he or she was placed in based on the assessment. Even though this is often how accurate placement is measured, Sullivan and Nielsen (2009) believed that research indicates there are other factors that can be used to assist with placing students. These summarized factors include pre-college performance, performance in first college term, non-academic influences, and differences among curriculum, grading, and instruction. Sullivan and Nielsen (2009) went on to explain that assessment and scoring, as a means of student placement, is not an exact science and that educators must use caution when attempting to discover one correct placement score. The authors pushed for multiple placement options instead of

attempting to determine one way to assess and place students. This dissertation study explores the relationships among high school GPA, ACT score, and placement choice in an effort to discover how previous performance can be used to assist with student placement.

### Interventions to Impact Readiness

In order to set up the landscape properly for this dissertation study it is necessary to include a section dedicated to reviewing the literature regarding interventions to address student readiness concerns.

There are differing opinions on how to implement programs to address college readiness. The issue of improving programs to assist students who are not prepared for college is complicated by the fact that many of the current instruments used to measure readiness are not adequate. A common way colleges and universities address academic readiness is through preparatory courses. Offering preparatory courses alone focuses on addressing the academic deficiencies students have when they enter college. Even though preparatory courses are common, they are not the only answer to helping students prepare for college-level work. Arendale (2000) explained that the needs of students who lack college readiness go beyond initial preparatory courses. He pointed out that the additional offerings can include:

noncredit academic enrichment activities such as tutoring, supplemental instruction, learning strategy workshops, or similar activities; students of any classification who enrolled in developmental courses. (p. 1)

The most recent comprehensive published report that looks at preparatory courses was conducted through the Postsecondary Education Quick Information System (PEQIS) of National Center for Education Statistics (NCES) in 2000. The authors, Parsad et al. (2003), compared

data collected in 2000 to data from the survey conducted in 1995. This report includes data from public and private two-year and four-year institutions. The preparatory course offerings it includes are reading, writing, and mathematics. According to this report, 28% of all college freshmen were enrolled in one or more preparatory courses in 2000 (2003). According to the NCES report, on average students spent approximately one year taking preparatory courses. The rate of participation in preparatory courses in 2000 was the highest at public two-year colleges, with 42% of community college freshman enrolled in at least one preparatory course. This compares to 12-24% of freshman who participated in these courses at four-year institutions (Parsad et al., 2003, pp. 3-4). This report also breaks out the data by course subjects reading, writing, and math. For writing at public two-year institutions, 20% of freshman took preparatory courses in reading, 23% took preparatory writing, and 35% took preparatory mathematics (p. 18). For public four-year institutions, 6% of freshman took preparatory courses in reading, 9% took preparatory writing, and 16% took preparatory mathematics (p. 18). The public four-year institution figure for preparatory writing is important to consider as this aligns with the population that will be used for the sample in this dissertation study.

The NCES report mentioned earlier in this discussion also reveals information about the institutional structure of programs that offer preparatory courses. The most common approach found in 2000 was to offer placement tests to all students entering their freshman year of college. The study reports that 57-61% of all institutions used this approach for offering preparatory courses. Also, a majority of the offered programs attach a mandatory placement policy to the exams. In 2000, 75-82% of all institutions required students to enroll in preparatory courses once it was determined by their placement exam that remediation was necessary. Additionally,

the study found that most (82-88%) institutions have restrictions on what courses students can register for based on completion of preparatory courses.

The last focus area of the NCES study (that was conducted in 2000 and published in 2003) discussed for the purpose of this research is the time limits that institutions set on preparatory course enrollment. According to the NCES study, 26% of all institutions reported a set length of time limit on the preparatory courses. These time limits were mainly dictated by university or institution policy. No specific time limits were discussed in the report summary. By reviewing the NCES “Remedial Education at Degree-Granting Postsecondary Institutions in Fall 2000” report, an overall picture of the structure of preparatory education in the U.S. is painted (Parsad et al., 2003). It is clear that programs that offer preparatory courses vary greatly.

#### Concerns with Preparatory Courses

The debate surrounding the effectiveness of preparatory courses is ongoing. Specific concerns about how much preparatory courses cost and the benefit to students is weaved throughout nearly all the literature on college readiness. Saxon and Boylan (2001) found that there is a significant amount of debate surrounding the cost of remediation and there are very few research focused studies that successfully determine the actual costs of these programs. Saxon and Boylan (2001) recognized the limitations of this literature review but feel that the findings within the studies they reviewed and the overall lack of research are valid and worth discussing.

Understanding the effectiveness of preparatory courses is difficult given the complexity of how courses are offered throughout the nation. Saxon and Boylan (2001) introduced five main challenges that limit the ability to gather accurate data regarding preparatory courses. The first challenge is the lack of a consistent implantation of programs that offer preparatory courses.



When data are collected, it often either includes programs that are not considered preparatory (e.g., English as a Second Language [ESL]) or disregards programs that can fall into the preparatory category (e.g., tutoring, testing, advising) (Saxon & Boylan, 2001). The second main challenge that arises when attempting to collect and understand data regarding preparatory courses is inconsistent. The policies and methods in which students are tested for, placed in, and participate in preparatory courses vary from institution to institution. The way in which preparatory courses are taught is the third main challenge discussed in this article. The data collected regarding the actual faculty members teaching preparatory courses are difficult to dissect because the courses being taught are varied among the faculty. The cost breakdown is generally challenging to determine in these situations. Preparatory courses are not always housed in a separate area within universities, which creates the fourth main challenge for data collection. Saxon and Boylan (2001) explained that these courses are often spread out throughout the university based on subject. This makes cost breakouts difficult for universities as budgets and salaries can differ among departments. The fifth and final challenge that Saxon and Boylan (2001) discussed in this article is the underestimation of costs for programs that include preparatory courses. They believed that officials will not clearly identify how much money is invested into such programs for fear of scrutiny. All of these challenges make it difficult to get a true gauge on the cost of the various preparatory programs.

Through the review of the five studies, Saxon and Boylan (2001) found that each program clearly covered the costs of its preparatory course offerings. They found that all of the programs they reviewed either broke even or were profitable. None of the five programs reviewed lost money from offering preparatory courses. Based on their research, the authors also explained that community colleges typically earn money from offering preparatory courses.

Saxon and Boylan (2001) indicated that “remediation typically costs less than 10% of education as a whole, and, in most cases, this figure is in the 1% to 2% range” (p. 8).

### Impacting Persistence to Second Year

The final section of this chapter will briefly review the literature on success in the first year and persistence to second year. While most research on the subject of student persistence focuses on student engagement and involvement, there is often a connection between lack of persistence and what students experience during their first year. Other factors to consider when looking at why students persist include socioeconomic status, previous success in high school, and academic ability. Few studies address the relationship between persistence and self-efficacy. This approach holds interest, however, because self-efficacy includes a notion of students’ confidence levels. Bandura (1997) asserted “effective functioning requires both skills and the efficacy beliefs to use them well” (p. 37). Kahn and Nauta (2001) linked academic ability confidence level to students’ abilities to persist. Students’ skill levels and efficacy beliefs can both impact their abilities to persist. Generally, the issue of persistence within preparatory courses is ascribed to the idea that students in these courses do not have the necessary skills to succeed in college. A majority of first-year students are placed into preparatory courses based on standardized placement exams (Parsad et al., 2003). Placing students in this way makes it difficult to decipher how many of these students could succeed in college-level courses based on factors beyond abilities that are tested through a standardized exam.

Does the act of requiring students who have low confidence in their abilities to take additional standardized exams (beyond entrance exams) and placing them (without their input) into preparatory courses negatively affect them? The research that has been completed on self-

efficacy and preparatory education is inconclusive. Lynch (2006) examined self-efficacy and extrinsic goals. He also indicated that freshmen are less likely to be aware of their strengths and weaknesses as they enter college. Lynch (2006), as well as Kesici and Erdogan (2009) looked specifically at self-efficacy as it relates to placement exams and standardized placement exams. Both studies encourage additional research on student self-efficacy as a predictor of grades.

The findings of these studies indicate further exploration of alternative placement approaches that move away from standardized entrance and placement exams. Requiring students to demonstrate readiness through performance on these exams alone does not lead to positive results in subsequent courses in all cases. Additionally, it is not clear in the literature that the standardized entrance and placement exams are able to predict success in preparatory or college-level courses.

As presented in this chapter, a careful review of the literature surrounding the first-year college experience shows that the definition of readiness varies throughout the literature and current methods used to measure readiness are limited and even flawed. Also, it reveals that the interventions that are currently being used to impact student readiness lead to mixed results based on a variety of factors. Several gaps in the literature persist, including how the placement process may affect students in their first-year courses, how alternative placement methods could impact students in terms of their abilities to succeed and persist, and how previous performance is related to placement choice and subsequent student success and persistence. Thus, a study will be designed that builds upon the student readiness first-year experience, student success and persistence literature, but focuses on how the placement process as well as previous performance factors, such as high school GPA and ACT combined, can be related to student success and course persistence.

## Chapter Summary

This review of literature included an overview of the research surrounding college readiness and the typical first-year experience. Additionally, literature was reviewed specific to the impact that placement may have on student success and persistence. It was noted that there is a lack of research focused on the placement process as it relates to student success and persistence. By reviewing these areas of research it is possible to set a foundation for this study. The results of this study are intended to further enrich the literature specifically related to student readiness, student placement process, first-year experience, student success, and student persistence.

## CHAPTER 3

### METHODS

The purpose of this study is to explore the relationships among DSP, student persistence and success in higher education. An alternative method of placement is explored in this study to further understand DSP in lieu of testing and placement of new college students. A secondary analysis of previously studied data was conducted to specifically address questions regarding student success and persistence and the relationships among DSP, student persistence and success.

1. How does previous performance as indicated by ACT score and high school GPA relate to students' choices in the DSP process?
  - a. Is there a difference in the mean ACT scores among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?
  - b. Is there a difference in the mean high school GPA among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?
  - c. Does ACT score and high school GPA predict students' choices to take the preparatory writing course or the college-level writing course?
2. How does previous performance measured by ACT score and high school GPA relate to students' persistence (course completion) in the college-level writing course?

- a. Is there a difference in the mean ACT scores between students who persist through the course by completing the course with a passing grade and those who did not persist and received an F or W grade?
  - b. Is there a difference in the mean high school GPA between students who persist through the course by completing the course with a passing grade and those who did not persist and earned an F or W grade?
  - c. Do ACT score and high school GPA predict persistence?
3. How does the DSP choice relate to student success in terms of course persistence?
  4. How does the DSP decision relate to student success in terms of course grade?
    - a. Is there a difference in the mean writing course grade among students who chose to take the college-level course without taking the preparatory writing course and those who chose to take the preparatory writing course first?
    - b. Does DSP choice predict student success in the course they select to take first?

### Research Design

To answer the research questions posed, a secondary analysis was conducted. This analysis utilized data that was previously collected by another research group. This design compared students based on previous performance and placement decisions in order to assess differences in course success and persistence.

The previous research conducted in 2011 was completed by Royer, Rhodes, Guevara, and Lehker. This unpublished research study sought to understand if self-directed placement into preparatory writing was accomplishing the goal of increasing student self-confidence and

preparedness for second-semester college composition. The students in this initial study participated in the DSP process.

### DSP Process

The DSP process, which is still being utilized at this university, is completed in three steps. Students first receive a letter and a brochure explaining the placement process and the course descriptions for the writing courses. Students complete a self-inventory that can help them with their placement decision. During orientation students complete step two of the DSP process where the course information and the importance of the decision are reviewed. For step three students fill out a choice card that they discuss with their orientation advisor. Students are also encouraged to ask specific questions while completing step three (Royer & Giles, 2003).

For the original study researchers conducted focus groups with the students who chose to take the preparatory writing course in order to gather the following qualitative self-impressions 1) past experience with writing, 2) current perception of self as a writer, 3) change in perception of self as a writer pre-class to present. The results of their qualitative study reported that all students felt an increased level of self-confidence as a result of making their own placement choice. The primary research was qualitative and reported students' impressions of their success. Student success and persistence results were not explored specifically in the initial research completed in 2011.

For this secondary analysis, student records indicating letter grade earned (A-F and W) in the preparatory writing and standard writing course during the Fall semester of 2011 were utilized. As mentioned previously, these choices were made after consultation with an advisor during students' orientation. To measure persistence, the final letter grade will be used.

Students who earned a letter grade of A-D were considered as having persisted successfully through the course. Those students who earned a letter grade of F or W were coded as unsuccessful completion or did not persist. Persistence in the subsequent writing course was considered, and student records indicating letter grade in that course was utilized. These records were coded the same to indicate persistence and student success.

### Data Collection

Data collection specific to the population and the site that was provided for this secondary analysis are described in the sections that follow.

### Participants

The student sample was drawn from a Midwestern university that has approximately 21,000 undergraduate students. A sample of approximately 2,800 students was used. All of the students in this sample completed the DSP process.

### Site Description

It is important to point out the nature of the institution where the participants attended. The demographics for this Midwestern university first time in any college (FTIAC) freshmen reveals that these students tend to have high performance in terms of ACT score and high school GPA. Specifically, in the Fall semester of 2011 the FTIAC students had a mean ACT score of 23.76 and a mean high school GPA of 3.51 (Dykstra, 2011). A majority of the FTIAC students that semester were also full-time and lived on campus. Retention rate from Fall semester of 2011 to Fall semester of 2012 for FTIAC was 81% (Dykstra, 2011). The student demographics



of this university's freshman are not similar to all freshmen entering higher education throughout the nation.

### Sample

The sample included in this secondary analysis was 2,760 students who entered the university in the Fall or Spring semesters in 2011 as first time college students and took the preparatory writing course or standard writing course in their first semester. The data set includes course letter grade earned in either course (A-F or W) and student GPA. The students in this sample can be categorized into two different groups based on their DSP choice:

1. 330 students who took the standard level course (WRT 150) after taking preparatory (WRT 098) writing course, and
2. 2,430 students who took the college-level writing course (WRT 150) without taking the preparatory writing course

### Analysis

In order to address research questions 1a and 1b *t*-tests were conducted and effect sizes (Cohen's *d*) computed to understand the relationships between the mean ACT scores and high school GPA among students who chose the standard writing course and those who chose to take the preparatory writing course. For question 1c a logistic regression analysis was conducted and odds-ratios computed, with the independent variables being student ACT score and high school GPA and the dependent variable being the placement choice.

To address research questions 2a and 2b *t*-tests and effect sizes were used to discern mean differences of ACT score and high school GPA depending on persistence rate through the

writing course that was selected. For question 2c a logistic regression analysis was performed and odds ratios-computed to assess the extent to which student ACT scores and high school GPA predict persistence through the first writing course.

For research question 3, a chi-square test of independence was conducted to determine if the proportion of students who took and passed WRT 098 Writing with a Purpose was significantly different from the proportion who took only WRT 150 and passed.

To address question 4a a *t*-test was conducted and effect size was used to understand the mean difference of course grade for WRT 150 among students who selected to take WRT 098 prior to taking WRT 150 and those who selected to only take WRT 150. Finally, for research question 4b an ordinal regression was conducted to test if students' course grades (A-F) in WRT 150 could be predicted based on students' choices controlling for previous performance specifically, ACT score, and high school GPA.

### Chapter Summary

This chapter reviewed the methods for this dissertation study. It was explained that a secondary analysis was conducted using data from a sample that was used to conduct a qualitative study on the DSP process. Directed Self-Placement (DSP) was explained, and the participants and site were described. An overview of the analysis for each research question was also presented. The results of these analyses are presented in Chapter 4.

## CHAPTER 4

### RESULTS

The data set used in this study included 2,760 first-time college students who took the preparatory writing course: WRT098: Writing with a Purpose (preparatory) and/or college-level writing course WRT150: Strategies in Writing in the Fall semester of 2011 and Spring semester of 2012. Each of these students completed the DSP process. The information about both writing courses was provided to them prior to making their writing course selection. For this analysis student success and completion were reviewed specifically using the data results from the first writing course that students selected and took. For students who took Writing with a Purpose (WRT098), analysis was completed using the results only from this course. Students who did not have a grade indicated in the data for WRT098 selected to take WRT150, therefore, the results from 150 were used. The mean ACT score for the sample was  $M = 22.98$ . The mean high school GPA for the sample was  $M = 3.45$ . Success for the course was indicated by letter grades A-D. The grade distribution for the sample is represented in Table 1. For this study, students who completed the course with a grade of A-D (excluding those who earned an F or W grade) were considered to have persisted. The sample characteristics are presented in Table 2. Specific demographic data for this data set were not provided beyond the variables that were used for this study (ACT Score, high school GPA, DSP choice, and course grades).

Table 1

## First Writing Course Final Grade Distribution

Final Grade	Frequency	Percent
A	467	16.92%
A-	178	6.45%
B+	669	24.24%
B	429	15.54%
B-	190	6.88%
C+	299	10.83%
C	352	12.75%
C-	9	0.33%
D+	5	0.18%
D	70	2.54%
F	42	1.52%
W	50	1.81%
Total	2760	100.00%

## Analyses Pertaining to Research Questions

The following details the results pertaining to each of the research questions posed for this study.

1. *How does previous performance as indicated by ACT score and high school GPA relate to students' choices in the DSP process?*
  - a. *Is there a difference in the mean ACT scores among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?*

Table 2  
Sample Characteristics

Characteristic		Frequency	Percent
Overall ACT Score Range	<17	110	3.99%
	18-20	475	17.21%
	21-24	1349	48.88%
	25-28	697	25.25%
	29-31	121	4.38%
	32-34	8	0.29%
	Total	2760	100.00%
High School GPA Range	2.0-2.49	8	0.29%
	2.5-2.99	234	8.48%
	2.0-3.49	1262	45.72%
	3.5-3.99	1138	41.23%
	4.0	118	4.28%
	Total	2760	100.00%
First Course Selected	WRT 098 (Preparatory)	330	11.96%
	WRT 150 (College Level)	2430	88.04%
	Total	2760	100.00%

Table 3 provides descriptive statistics for ACT scores by course. The mean ACT score of students who took the preparatory writing course was  $M = 19.8$  ( $SD = 2.87$ ), and the mean ACT score of students who only took the college-level course was  $M = 23.4$  ( $SD = 2.91$ ). A two tailed  $t$ -test was conducted to determine if the mean ACT scores of those who elected to take the preparatory writing course were significantly different from those who took the college-level writing course. Levene's test was not statistically significant ( $p = .78$ , see Table 4), leading to

the conclusion of equal variances and therefore allowing for use of the pooled variance for the  $t$ -test. Results from the  $t$ -test (Table 5) show that the mean ACT score of students who elected to take the preparatory writing course was significantly lower than the mean ACT score of those who took the college-level course,  $t(2,758) = -21.19, p < .0001$ . The effect size, Cohen's  $d = 1.24$ , suggested a large effect.

Table 3

Descriptive Statistics for ACT Scores by Course Selection

Course Selection	$N$	$M$	$SD$
WRT 098	330	19.81	2.87
WRT 150	2430	23.41	2.91

Table 4

Levene's Test for Equality of Variance in ACT Scores

Equality of Variances				
Method	$df1$	$df2$	$F$	$p$
Folded $F$	2429	329	1.02	0.78

Table 5

Two-Tailed  $t$ -Test for Group Differences in ACT Scores

Method	Variances	$df$	$t$	$p$
Pooled	Equal	2758	-21.19	<.0001
Satterthwaite	Unequal	425.84	-21.38	<.0001

- b. *Is there a difference in the mean high school GPA among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?*

Table 6 provides descriptive statistics for GPA by course chosen. The average high school GPA of students who took the preparatory writing course was  $M = 3.29$  ( $SD = 0.32$ ) and the average high school GPA of students who only took the college-level course was  $M = 3.47$  ( $SD = 0.32$ ). The equality of variance test was not statistically significant,  $p = .81$  (Table 7), well above the 0.05 significance threshold, leading to a conclusion of equal variances and allowing to proceed with the pooled method for the  $t$ -test. Results from the  $t$ -test show that the mean high school GPA of students who elected to take the preparatory writing course was significantly lower than those who took only the college-level course,  $t(2758) = -9.65$ ,  $p < .001$ , Cohen's  $d = 0.56$ , suggested a medium effect (Table 8).

Table 6

## Descriptive Statistics for GPA by Course Selection

Course Selection	$n$	$M$	$SD$
WRT 098	330	3.29	0.32
WRT 150	2430	3.47	0.32

Table 7

Levene's Test for Equality of Variance in High School GPA

Equality of Variances				
Method	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>p</i>
Folded <i>F</i>	2429	329	1.02	.81

Table 8

Two-Tailed *t*-Test for Group Differences in High School GPA

Method	Variances	<i>df</i>	<i>t</i>	<i>p</i>
Pooled	Equal	2758	-9.65	<.0001
Satterthwaite	Unequal	421.58	-9.58	<.0001

- c. *Does ACT score and high school GPA predict students' choices to take the preparatory writing course or the college-level writing course?*

A logistic regression was conducted to determine if ACT score and high school GPA predicted the likelihood that a student would elect to take the preparatory course. Due to the large sample size, 30% of the data was withheld from the regression to cross-validate the model. The training data that was used in constructing the model contained a total of 1,932 students, of whom 231 took the preparatory course first and 1,701 did not. The omnibus test (Table 9) showed that the model with the predictors fit significantly better than the constant-only (i.e., null) model [ $\chi^2(2) = 323.39, p < .0001$ ]. Both ACT score [ $b = -0.46, p < .0001$ ] and high school GPA [ $b = -0.66, p < .0001$ ] were found to be statistically significant, negative predictors of a student's likelihood to take the preparatory course (Table 10). The parameter



estimates indicate that, when controlling for GPA, each unit increase in ACT score was associated with a  $1/0.63 = 1.59$  times increase in the odds of choosing the college-level course (Table 11). Similarly, when controlling for ACT score, each unit increase in GPA was associated with a  $1/0.52 = 1.94$  times increase in the odds of choosing the college-level course (Table 11).

Table 9

Test of Global Hypothesis for Logistic Regression of Preparatory Course Enrollment on ACT Score and High School GPA

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	<i>df</i>	<i>p</i>
Likelihood Ratio	323.39	2	<.0001
Score	285.95	2	<.0001
Wald	221.8	2	<.0001

The logistic regression model was next applied to the holdout sample dataset. The predicted values (Table 12) represent the predicted rate of students to take the preparatory course for a given segment of the population. The preparatory taker rate is the rate at which the groups took the preparatory course. As indicated in Table 12, the analysis with the holdout group supported the reliability of the model.

Table 10

Logistic Regression results for Regression of Preparatory Course Enrollment: ACT Score and High School GPA

Parameter	<i>df</i>	<i>b</i>	Standard Error	Wald Chi-Square	<i>p</i>	Standardized Estimate
Intercept	1	10.15	0.97	109.33	<.0001	
ACT Score	1	-0.46	0.03	185.46	<.0001	-0.79
HS GPA	1	-0.66	0.26	6.53	0.0106	-0.12

Table 11

Odds Ratio Estimates and Associated Confidence Intervals for Effects of ACT Score and High School GPA on Preparatory Course Enrollment

Effect	Estimate	95% Confidence Limits	
		Lower	Upper
ACT Score	0.63	0.59	0.67
HS GPA	0.52	0.31	0.86

Table 12

Descriptive Statistics for Holdout Sample Set Who Selected to Take WRT 098 Writing with Purpose (Preparatory Course)

Model	Rate students selected WRT 098	Frequency	Percent
0.00%	3.17%	378	45.65%
10.00%	11.91%	235	28.38%
20.00%	14.02%	107	12.92%
30.00%	25.00%	52	6.28%
40.00%	23.53%	17	2.05%
50.00%	46.67%	15	1.81%
60.00%	70.00%	10	1.21%
70.00%	87.50%	8	0.97%
80.00%	100.00%	6	0.72%

2. *How does previous performance measured by ACT score and high school GPA relate to students' persistence (course completion) in the college-level writing course?*

a. *Is there a difference in the mean ACT scores between students who persist through the course by completing the course with a passing grade and those who did not persist and received an F or W grade?*

A two tailed *t*-test was conducted to determine if the mean ACT scores of those who persisted through WRT 150 Strategies in Writing by completing with a passing grade were significantly different from those who did not persist by failing or withdrawing from the course. The descriptive statistics for ACT scores based on persistence are represented in Table 13. The average ACT score of students who persisted through the course was  $M = 22.99$  ( $SD = 3.11$ ) and the average ACT score of students who did not persist through the course was  $M = 22.77$  ( $SD =$

3.51). The equality of variance test provided a  $p = .08$  (Table 14), above the 0.05 significance threshold, leading to a conclusion of equal variances and allowing the ability to proceed with the pooled method for the  $t$ -test. Results from the  $t$ -test show that the mean ACT scores did not differ between the two groups  $t(2,758) = -0.067, p = 0.50$  (Table 14). Because equality of variance was marginal (Table 15), and sample sizes were very discrepant, the Satterthwaite  $t$ -test results were examined, which also indicated no significant difference between groups,  $t(101.57) = -0.60, p = .55$  (Table 14).

Table 13

## Descriptive Statistics for ACT Scores by Persistence

Course Persistence	$n$	Mean ACT Score	$SD$	Std Err	Minimum	Maximum
Did not persist	97	22.77	3.51	0.36	14	32
Persisted	2663	22.99	3.11	0.06	15	34

Table 14

## Two-Tailed t-Test for Group Differences in ACT Score

Method	Variances	$df$	$t$	$p$
Pooled	Equal	2758	-0.67	.50
Satterthwaite	Unequal	101.57	-0.6	.55

Table 15

## Levene's Test for Equality of Variance in ACT Score

Equality of Variances				
Method	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>p</i>
Folded F	96	2662	1.27	.08

- b. Is there a difference in the mean high school GPA between students who persist through the course by completing the course with a passing grade and those who did not persist and earned an F or W grade?*

A two-tailed *t*-test was conducted to determine if the mean high school GPA of those who persisted through the course was significantly different from those who did not persist. As indicated in Table 16 the average high school GPA of students who persisted was  $M = 3.45$  ( $SD = 0.32$ ), and the average ACT score of students who did not persist was  $M = 3.26$  ( $SD = 0.31$ ). The equality of variance test (Table 17) provided a *p*-value of .46, which is above the .05 significance threshold, leading to a conclusion of equal variances and allowing the ability to proceed with the pooled method for the *t*-test. Results from the *t*-test show that those persisted through the course had significantly higher mean GPA in high school than those who did not,  $t(2758) = -5.67$ ,  $p < .001$ , with Cohen's  $d = 0.59$  suggesting a medium effect size.

Table 16

## Descriptive Statistics for GPA by Persistence

Course Persistence	<i>N</i>	Mean GPA	SD	Std Err	Minimum	Maximum
Did not persist	97	3.26	0.31	0.03	2.69	4
Persisted	2663	3.45	0.33	0.01	2.06	4

Table 17

## Levene's Test for Equality of Variance in Mean High School GPA

Equality of Variances				
Method	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>p</i>
Folded F	2662	96	1.13	0.46

*c. Do ACT score and high school GPA predict persistence?*

A logistic regression was conducted to determine if ACT score and high school GPA predicted the likelihood that a student persisted through the course. As stated previously, due to the size of the sample, 30% of the data was withheld from the regression to test the reliability of the data. The training data that was used in constructing the model contained a total of 1,933 students, 1,865 of whom persisted through the course while 68 did not persist (Table 18). Convergence was met with both ACT score and high school GPA included in the training data model. The omnibus test (Table 19) showed that the model with the predictors fit significantly better than the constant-only (i.e., null) model [ $\chi^2(2) = 22.37, p < .0001$ , Table 20]. Examining the individual predictors, high school GPA, when controlling for ACT, was a significant predictor of student persistence [ $\chi^2(2) = 72.23, p < 0.001$ , Table 21]. The parameter estimates

indicate that, when controlling for ACT score, each unit increase in GPA was associated with a 6.43 times increase in the odds of persisting through the course (Table 22). Conversely, ACT score was a marginally significant predictor of course persistence [ $\chi^2(2) = 3.82, p = .05$ , Table 21]. The parameter estimates indicate that, when controlling for GPA, each unit increase in ACT is positively associated with a  $1/0.92 = 1.08$  times increase in the odds of persisting through the course (Table 22).

Table 18

Descriptive Statistics for Holdout Sample for Persistence Rate

Model	Persistence Rate	Freq	Percent
80.00%	100.00%	2	0.24%
90.00%	93.25%	163	19.71%
100.00%	97.28%	662	80.05%

Table 19

Test of Global Hypothesis for Logistic Regression of Persistence on ACT score and High School GPA

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	<i>df</i>	<i>p</i>
Likelihood Ratio	100.45	2	<.0001
Score	98.71	2	<.0001
Wald	93.63	2	<.0001

Table 20

## Cross-Classification of Course Result by Course Type

Course Result		WRT098	WRT150	Total
Failed or Withdrawn	Frequency	15	82	97
	%	0.54%	2.97%	3.51%
Passed	Frequency	315	2348	2663
	%	11.41%	85.07%	96.49%
Total	Frequency	330	2430	2760
	%	11.96%	88.04%	100.00%

Table 21

## Logistic Regression Results for Regression of Persistence on ACT Score and High School GPA as Predictors

Parameter	<i>df</i>	<i>b</i>	Standard	Wald	<i>p</i>	Standardized Estimate
Intercept	1	-4.86	0.6	66.2	<.0001	
ACT Score	1	0.03	0.02	3.82	0.05	0.06
HS GPA	1	1.44	0.17	72.23	<.0001	0.26

Table 22

## Odds Ratio for ACT Score and High School GPA and Student Persistence

Effect	Estimate	Lower Bound	Upper Bound
ACT Score	0.92	0.85	1
HS GPA	6.43	2.98	13.98



3. *How does the DSP choice relate to student success in terms of course completion?*

A chi-square test of independence was conducted to determine if the proportion of students who took and passed WRT 098 was significantly different from the proportion who took only WRT 150 and passed. This analysis used the full sample ( $N = 2,760$  students). A cross-classification table of frequencies is represented in Table 20. Of these students, 330 students (11.96%) took the preparatory course, and 2,430 students (88.04%) did not take the preparatory course. Of the students who took the preparatory course, 315 (95.45%) passed the course, and among the students who took the college-level course, 2,430 (96.62%) passed. Results show that the proportion of students who passed and failed the course were not significantly different for the two courses,  $\chi^2(2, N = 2,760) = 1.17, p = .28$  (Table 23) with a small effect size ( $\phi = .02$ ).

Table 23

Chi-Square Test of Independence

Statistic	<i>df</i>	Value	<i>p</i>
Chi-Square	1	1.17	.28
Phi Coefficient		0.02	

A logistic regression was conducted to determine if whether the student took the WRT 098 Writing with a Purpose predicted the likelihood that students would pass their first writing course, controlling for ACT score and high school GPA. Thirty percent of the data was withheld from the regression to assess the reliability of the data (Table 24). The training data that was used in constructing the model consisted of 1,933 students, of whom 1,865 passed while 68 failed or withdrew. Convergence was met with all three variables included in the model. The ACT score and high school GPA were both found to be statistically significant predictors, with

ACT scores negatively associated with passing the course (Table 25) Wald  $\chi^2 = 4.42$ , [ $b = -0.09$ ,  $p = .04$ ] and high school GPA positively associated with passing, Wald  $\chi^2 = 21.89$  [ $b = 18.4$ ,  $p < .0001$ ]. Each unit increase in GPA was associated with a 6.33 times (Table 26) increase in the odds of passing the course. However, as indicated in Table 27, the decision to take the preparatory course did not significantly predict success in the first writing course that was selected over and above the effects of ACT score and high school GPA, Wald  $\chi^2 = 0.59$  [ $b = -0.30$ ,  $p = 0.44$ ].

Table 24

## Training Data Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	590.82	573.74
SC	596.38	596.00
-2 Log L	588.815	565.74

Table 25

## Test of Global Hypothesis for Logistic Regression of Course Completion on ACT score, High School GPA and Preparatory Course Enrollment

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	df	p
Likelihood Ratio	23.08	3	<.0001
Score	24.02	3	<.0001
Wald	23.22	3	<.0001

Table 26

Odds Ratio Estimates and Associated 95% Confidence Bounds

Effect	Estimate	Lower Bound	Upper Bound
ACT Score	0.91	0.84	0.99
HS GPA	6.33	2.93	13.77
Took WRT 098	0.74	0.36	1.67

Table 27

Logistic Regression Results for Regression of Course Completion on ACT Score and High School GPA

Parameter	<i>df</i>	<i>B</i>	Standard Error	Wald Chi-Square	<i>p</i>	Standardized Estimate
Intercept	1	-0.73	1.45	0.26	0.61	
ACT Score	1	-0.09	0.04	4.42	0.04	-0.16
HS GPA		1.84	0.39	21.89	<.0001	0.33
Took WRT 098	1	-0.3	0.39	0.59	0.44	-0.05

4. *How does the DSP decision relate to student success in terms of course grade?*

- a. *Is there a difference in the mean writing course grade among students who chose to take the college-level course without taking the preparatory writing course and those who chose to take the preparatory writing course first?*

To address this question, only those students who did not withdraw from their chosen class were used for the analysis. Additionally, when treating the course grades as grade points on a 0 to 4 scale, a two-tailed *t*-test was conducted to determine if the mean course grade of those

who elected to take the preparatory writing course was significantly different from those who took the college-level writing course without the preparatory course. Table 28 provides descriptive statistics for the course grade points by DSP choice. The mean course grade of students who took the preparatory writing course was  $M = 2.65$  ( $SD = 0.87$ ), and the mean course grade of students who only took the college-level course only was  $M = 2.93$  ( $SD = 0.81$ ). Levene's test was not statistically significant ( $p = .11$ , see Table 29), leading to a conclusion of equal variances and allowing to proceed with the pooled method for the  $t$ -test. Results showed that the mean grade of students who elected to take the preparatory writing course was significantly lower than the mean grade of those who took only the college-level course,  $t(2,705) = -5.76$ ,  $p < .001$ , with Cohen's  $d = 0.33$  suggested a small effect size (Table 30).

A two tailed  $t$ -test was conducted to determine if the mean WRT 150 Strategies in Writing grade (measured on 4.0 scale) of those who elected to take the preparatory writing course first (and later took the college-level writing course) was significantly different from those who took the college-level writing course. As indicated in Table 31 the average WRT 150 Strategies in Writing grade of students who first took the preparatory writing course was 2.66

Table 28

## Descriptive Statistics for the Course Grade Points by DSP Choice

DSP Choice	$n$	Mean	Std Dev	Std Err	Minimum	Maximum
WRT 098	322	2.65	0.87	0.05	0	4
WRT 150	2385	2.93	0.81	0.2	0	4

Table 29

Levene's Test for Equality of Variance in Mean Course Grade WRT 098 &amp; WRT 150

Equality of Variances				
Method	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>p</i>
Folded <i>F</i>	321	2384	1.14	0.11

Table 30

Two-Tailed t-Test for Group Differences in Mean Course Grade

Method	Variances	<i>df</i>	<i>t</i>	<i>p</i>
Pooled	Equal	2705	-5.76	<.0001
Satterthwaite	Unequal	400.75	-5.48	<.0001

( $SD = 0.86$ ), and the mean WRT 150 Strategies in Writing grade of students who only took the college-level course was 2.92 ( $SD = 0.82$ ). The equality of variance test provided a  $p = 0.16$  (Table 32), which was above the .05 significance threshold, leading to the conclusion of equal variances and allowing use of the pooled method for the  $t$ -test. Results from the  $t$ -test show that the mean WRT 150 Strategies in Writing grades of students who elected to take the preparatory writing course was significantly lower from those who took only the college-level course,  $t(2768) = -5.60, p < .0001$ . Cohen's  $d = 0.32$  suggested a small effect size (Table 33).

Table 31

Two-Tailed *t*-test for Group Differences for Course Grades

Course Selection	<i>n</i>	Mean Course Grade (4.0 Scale)	Std Dev	Std Err	Minimum	Maximum
WRT 098	330	2.65	0.86	0.04	0	4
WRT 150	2440	2.92	0.82	0.016	0	4

Table 32

Levene's Test for Equality of Variance in WRT 150 Grade

Equality of Variances				
Method	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>P</i>
Folded F	329	2439	1.12	.16

Table 33

Two-Tailed *t*-Test for Group Differences in WRT 150 Grades

Method	Variances	<i>df</i>	<i>t</i>	<i>P</i>
Pooled	Equal	2758	-5.60	<.0001
Satterthwaite	Unequal	412.43	-5.36	<.0001

b. *Does DSP choice predict student success in the course they select to take first?*

An ordinal regression also was conducted to test if the student's course grade (A-F) could be predicted based on student's choice of course, controlling for ACT score and GPA. Results from the regression indicated that the predictors taken together significantly predicted the

outcome,  $\chi^2(3, N = 2,760) = 393.16, p < .001$  (Table 34). More specifically, a student's choice to take WRT 098 Writing with a Purpose was a significant positive predictor of course grade ( $b = 1.27, p < .001$ ). As indicated in Table 35 both high school GPA and ACT score significantly and positively predicted course grade ( $b = 1.75, p < .0001$  and  $b = 1.27, p < .0001$ , respectively).

Table 34

Test of Global Hypothesis for Ordinal Regression of Course Grade Based on ACT Score and High School GPA

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	<i>df</i>	<i>p</i>
Likelihood Ratio	393.16	3	<.0001
Score	361.33	3	<.0001
Wald	378.78	3	<.0001

Table 35

Results for Ordinal Regression of Course Grade on ACT Score and High School GPA

Parameter	<i>df</i>	<i>b</i>	Standard Error	Wald Chi-Square	<i>p</i>
Intercept A	1	-9.6	0.44	484.53	<.0001
Intercept A-	1	-9.15	0.43	446.21	<.0001
Intercept B+	1	-7.95	0.43	349.66	<.0001
Intercept B	1	-7.25	0.42	297.11	<.0001
Intercept B-	1	-6.91	0.42	272.26	<.0001
Intercept C+	1	-6.28	0.42	227.08	<.0001
Intercept C	1	-4.98	0.42	142.84	<.0001
Intercept C-	1	-4.92	0.42	139.39	<.0001
Intercept D+	1	-4.89	0.42	137.41	<.0001
Intercept D	1	-4.28	0.42	103.23	<.0001
ACT Score	1	0.07	0.01	35.43	<.0001
HS GPA	1	1.75	0.11	237.49	<.0001
Took WRT 098	1	1.27	0.12	122.74	<.0001

## Chapter Summary

The results of this study provide evidence suggesting that previous performance, specifically high school GPA and ACT score, was related to the writing course choice a student makes through the DSP process. It was also evident that there is a relationship between DSP choice and student success and persistence. Additionally, it was found that high school GPA and ACT score predicted success in the selected writing course. In terms of previous performance, high school GPA also related to persistence in the selected writing course, but ACT score was not significantly related. Chapter 5 further discusses the findings and conclusions of this study,



implications for institutions who may be considering alternative placement methods, as well as suggestions for future research.

## CHAPTER 5

### DISCUSSION

The purpose of this study was to further explore an alternative method of placement into preparatory or college-level writing courses for college freshmen. Specifically, the relationships among DSP, student persistence, and success in a writing course were analyzed through four main research questions in an effort to further understand DSP as an alternative to standardized placement exams. This chapter offers an overview and discussion of the results presented in Chapter 4, as well as additional discussion of the limitations of the findings of this study. The implications of these results for both practice and future research are also reviewed.

#### Overview of Findings

For this research study four main and five sub-research questions were examined. In this section the results are discussed.

*1. How does previous performance as indicated by ACT score and high school GPA relate to students' choices in the DSP process?*

To understand these relationships three sub-questions were analyzed.

*a. Is there a difference in the mean ACT scores among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?*

The results of the analysis for question 1a indicated that the mean ACT score for students who selected to take the preparatory writing course (WRT 098) were significantly lower than those who selected the college-level course (WRT 150).

*b. Is there a difference in the mean high school GPA among students who chose to take the preparatory writing course and those who chose to take the college-level writing course?*

The results of the analysis for question 1b indicated that the mean high school GPA of students who elected to take the preparatory writing course (WRT 098) were significantly lower than those who selected to take the college-level course (WRT 150) through the DSP process.

*c. Does ACT score and high school GPA predict a student's choice to take the preparatory writing course or the college-level writing course?*

The results of the analysis for question 1c indicated that both ACT score and high school GPA were found to be statistically significant predictors of a student's likelihood to take the preparatory course. When controlling for GPA, higher ACT scores were associated with an increase in the odds of choosing the college-level course. When controlling for ACT score, higher GPA was also associated with an increase in the odds of choosing the college-level course.

To further understand previous performance factors as they relate to course success and completion additional analysis was completed.

*2. How does previous performance measured by ACT score and high school GPA relate to student persistence (course completion) in the college-level writing course?*

To understand these relationships three sub-questions were analyzed.

- a. *Is there a difference in the mean ACT scores between students who persist through the course by completing the course with a passing grade and those who did not persist and received an F or W grade?*

The results from the analysis for question 2a showed that the mean ACT scores did not differ between students who successfully persisted through their first course and those who were not successful and received an F or W.

- b. *Is there a difference in the mean high school GPA between students who persist through the course by completing the course with a passing grade and those who did not persist and earned an F or W grade?*

The results of the analysis for question 2b indicated that students who successfully persisted through the course had significantly higher GPAs in high school than those who did not persist. To understand these relationships further an additional question was asked.

- c. *Do ACT score and high school GPA predict persistence?*

The results from the analysis for question 2c indicated that high school GPA, when controlling for ACT, may be used as a predictor of student persistence. Higher GPAs are associated with a higher likelihood of persisting through the college-level writing course. In order to further understand how placement is related to student success and persistence, additional analysis was completed regarding the DSP choice.

3. *How does the DSP choice relate to student success in terms of persistence?*

The results from this analysis indicated that the proportion of students who passed were not significantly different for the two courses. This would allow the conclusion that the persistence rate for both courses may not be related to the DSP choice.

To further understand the DSP process in terms of impact of the placement decision on student success and persistence the final research question asked.

4. *How does the DSP decision relate to student success in terms of course grade?*

To understand this relationship two sub-questions were analyzed.

- a. *Is there a difference in the mean writing course grade among students who chose to take the college-level course (WRT 150) without taking the preparatory writing course (WRT 098) and those who chose to take the preparatory writing course first?*

The results for this revealed that the mean grade in WRT 150 of students who elected to take the preparatory writing course WRT 098 first was significantly lower than the mean grade in WRT 150 of those who did not take WRT 098 and only took the college-level writing course. Although this analysis takes into account the placement choice of the student the results may have further implications beyond the relationship between DSP decision and course grade. Further discussion regarding these implications are addressed in the implications section.

- b. *Does DSP choice predict student success in the course they select to take first?*

The results of this analysis indicated that the decision to take the preparatory course did not significantly predict success in the first writing course that was selected over and above the effects of ACT score and high school GPA. Additional analysis was completed to further understand if the student's course grade (A-F) could be predicted based on student's choice controlling for ACT score and GPA. The results of the additional analysis indicated that the student's choice to take WRT 098 is a significant positive predictor of course grade within that course.

## Summary of Findings

In summary, there are three main findings based on the analyses that were conducted to address each of the eight research questions.

1. Previous performance, specifically high school GPA and ACT score, is related to a student's choice made through the DSP process.
2. Student choice through the DSP process to take the preparatory writing course WRT 098 or college-level WRT 150 is related to student success and persistence.
3. High school GPA is a better predictor of success and persistence than ACT score.

## Discussion

The section that follows is a discussion of the results of this study as they relate to the literature surrounding student readiness, readiness measurement methods, placement process and student success literature, more specifically on how the placement process and previous performance factors are related to student success and persistence. This discussion is divided into sections to group the findings and results together based on previous performance and each of the following: placement process, student persistence, and courses success.

### Previous Performance and DSP Choice Findings (Placement Process)

As introduced in the summary of the findings, the results of this study indicate that the mean ACT score and high school GPA were lower for students who selected to take WRT 098, the preparatory level course. These findings suggest that students at this institution were aware of their writing skill levels and did not over-place themselves. In addition to the findings

regarding the relationship between previous performance and DSP choice, this study also found that both ACT score and high school GPA can be used as predictors of writing course choice. This specific finding regarding prediction may also suggest that students are placing themselves appropriately. These findings align with the research conducted by Reynolds (2003), which suggests that students tend to accurately understand their writing abilities. Furthermore, Reynolds (2003) recognized that there are three key reasons why DSP is successful for placing students into writing courses: the statements and course descriptions presented to students accurately represent the skills needed to be successful in the courses, students understand their abilities much better than any placement exam could measure, and students are interested in doing what is “best for them” (p. 101).

The results from this dissertation study differed from the results that were seen in Florida when a self-placement option was provided to students. As presented in Chapter 2, students were provided with a choice in Florida in the 2014-15 school year. Implementing this alternative approach to placement led to increased enrollment in college-level courses in English and math, as well as an increased failure rate in both courses across the state (Smith, 2015). The results in Florida could be explained by the fact that students did not place themselves appropriately in alignment with their previous performances. Additional review of all of the factors that led to the increased enrollment in college-level courses and increased failure rate in those courses needs to be conducted to better understand the results.

An additional conclusion related to previous performance and student choice that can be drawn from these results is that it seems that students in the sample have an understanding of their overall readiness for college as they placed themselves appropriately. The students in this study received advisement during the DSP process regarding the content of the two courses.

This specific advice may have impacted their decisions as well. The higher the students' GPA and ACT scores, the higher the likelihood of selecting the college-level writing course. These findings would appear to corroborate Royer and Gilles's (1998) view of DSP as an alternative placement practice. One concern often raised about the DSP process is that students would select to bypass the preparatory course if given the option. Based on the results of this study, students' placement decisions seem to align with previous performance. Furthermore, nearly 12% of the participants within this sample selected to take WRT 098. This percentage is higher than the reported 9% of college freshman at four-year public institutions who took preparatory writing courses that was reported by Parsad et al. (2003). This indicates that students are placing themselves into preparatory writing at a slightly higher rate than the reported average. Also, it is important to note here that of the 9% of students who took preparatory writing at four-year public institutions only 1% of those institutions indicated they used an alternative approach of placement to standardized entrance and placement exams (Parsad et al., 2003, p. 22).

### Previous Performance and Student Persistence

When looking at previous performance as related to student persistence, the findings from this study indicate that the ACT scores did not differ for the students who successfully persisted through the course they selected. Within the sample the ACT scores and GPAs differ among the students, but GPAs were higher among the students who successfully persisted through the course. In terms of using previous performance to predict course persistence the findings of this study also indicate that both high school GPA and ACT score can be used to predict persistence, but the level of significance is lower for ACT score. These findings suggest that high school GPA is a more helpful predictor of persistence than ACT score. These results



confirm, and are consistent with, the research of Barnes et al. (2010); Conley (2008) and Belfield and Crosta (2012).

The findings specific to GPA being a predictor of success in the writing courses presented in this dissertation study confirm Belfield and Crosta's (2012) finding. Belfield and Crosta (2012) found that GPA is a good predictor of college performance, and they advocated for eliminating standardized placement exams.

Additionally, my study found that the persistence rates through the writing course that the students selected did not differ between the two courses. This finding suggests that persistence is not solely related to the DSP choice. Going beyond that suggestion, the findings regarding the relationship of choice on student persistence supports the literature that indicates that persistence and success in the first year is impacted by multiple factors (Barnes et al., 2010; Byrd & MacDonald, 2005; Conley, 2008; Kahn & Nauta, 2001). The findings of this study provide additional confirmation that persistence may be impacted by many factors.

#### Previous Performance and Course Success

When considering previous performance as it relates to student success in terms of course grade, my study found that the mean grade in WRT 150 for students who took WRT 098 was lower than the mean grade of those who took WRT 150 without taking WRT 098. These findings suggest that students appropriately selected to take WRT 098 based on their confidence in their skill levels. These findings also indicate that students did not over-place themselves into WRT 150. Additionally, the findings regarding the grades in WRT 150 for students who took WRT 098 do indicate there may be issues with the WRT 098 course. Specific review of course performance for WRT 098 is not within the scope of this study, but the literature on the subject

of readiness interventions was reviewed in Chapter 2. This review indicated that there are concerns about the effectiveness of preparatory courses. The findings of this study are in line with the literature and underscore the need for further research and ways to measure efficacy of preparatory courses. In addition to the findings reviewed in this section the implications will be discussed later in this chapter.

### Limitations of Findings

The scope of this study was limited to one alternative placement method, DSP. Also, the sample that was used for this study was limited to one institution. Although the sample size was ample, these results are based on DSP and course performance across two semesters. Reading, writing, and mathematics are the three most common subject areas where preparatory courses are offered across all of higher education with 11%, 14%, and 22% of college freshman taking preparatory courses in these areas respectively (Parsad et al., 2003). Mathematics has the highest percentage of college freshman enrolled in at least one preparatory math course. Having further understanding of how DSP could positively impact student success in math, writing, and reading would assist with implementing this or a similar alternative placement approach more widely. Both math and reading are areas where further exploration of alternative placement methods is necessary.

As discussed in Chapter 2, the variety of placement methods vary across institutions, and DSP is not a method that is being used widely at this time. Because of the various placement processes and the lack of access to other institutions that may be employing similar placement methods, this study takes a closer look at DSP at one specific institution.

This study has reviewed the placement process at one institution. The use of DSP and the results found in this study may be unique to this institution and might be difficult to relate to other institutions, such as community colleges. This Midwestern public four-year institution has admissions requirements, and ACT/SAT score and high school GPA are two of the many factors that are used to make acceptance determinations. Directed Self-Placement (DSP) as outlined throughout this study is unique to the writing department at this Midwestern university as it uses traditional placement methods for its math courses.

The results of this study may not be able to be generalized for all institutions given that the DSP process is well established and has been in place for nearly 20 years. The results would vary depending on institution type and length of adoption. The results that were seen in Florida when a self-placement process was implemented are not surprising given that it is a new and wide adoption of a process. It is necessary to consider the time to establish not only a functioning DSP process but to fully integrate in order to become a successful adoption institution.

The final limitation to be discussed in this study is related to scope. This study does not include analysis to provide further understanding into preparatory course performance. The preparatory writing course WRT 098 was not examined beyond the grades that students earned in the course and the comparisons that were analyzed. Because the analysis regarding the efficacy of WRT 098 was not included, this study does not discuss the findings regarding WRT 098 beyond noting the differences found during analysis.

## Implications for Future Research

There are a number of areas that require further exploration in relation to placement practices that would contribute to the literature. The scope of this study was limited, and the findings affirm the need to research alternative placement exams further. Future research opportunities exist in areas such as student satisfaction with placement practices, the impact of placement exams and placement results, alternative placement methods for mathematics courses, and other factors that impact placement and success. In this section these additional areas of exploration are introduced as recommendations for future research.

### Student Satisfaction with Placement Practices

This study was a secondary analysis using data from a primary study that was intended to understand the student satisfaction level with the DSP process at one Midwestern university. The primary study was a qualitative study that confirmed that students were satisfied with the current DSP process for writing courses. The findings of this secondary analysis reinforce the need for additional research to understand how satisfied students are with both standard placement processes and alternative placement processes. To explore student satisfaction further would lend understanding to how placement processes impact student success indicated by satisfaction specifically. Satisfaction can also be a factor that can impact student success.

### Impact of Placement Exams and Placement Results

The scope of this research did not include a comparison to standard placement practices. The findings do confirm the need to explore how standard placement practices impact student

success and persistence. Additional research could be completed to understand how placement specifically impacts student success through first-year courses. A specific research study suggestion would be to conduct an experimental study that would compare results of two groups of students. One group would complete a standard placement process (placement exam or using standardized exam score), and the other group would be taken through and placed using the DSP process. The success and persistence rates could be measured in order to compare the two placement methods. To enhance this research even further the study could look at additional factors such as self-efficacy level, confidence level, socioeconomic level, gender, and race. Completing a study such as this would provide insight into the possibility of moving beyond standard placement methods in an effort to impact first-year student success and persistence.

#### Using Alternative Placement Methods for Mathematics Course Placement

This study focused on the use of DSP for preparatory and college-level writing courses. Additional research could be performed at any university that is either currently using DSP (or a similar alternative placement approach) or would like to move towards an alternative placement method. This research could be completed to study various DSP practices that are being used within this institution in other courses as well as other institutions that are using a similar approach. A specific area that could be explored is mathematics. Mathematics has the highest level of preparatory course enrollment across higher education in the U.S. (Parsad et al., 2003). Not only is mathematics a high enrollment preparatory course, as presented in Chapter 2, it is an area that creates high test anxiety for students. The results of this study support the need to explore an alternative placement approach across reading, writing, and mathematics.

### Other Factors that Impact Placement and Success

There are many factors that impact student success and persistence. The research that has been conducted on these topics is vast and draws many different conclusions. Placement in, and completion of, preparatory courses are two factors that impact student success. As discussed in Chapter 2 and earlier in this chapter, a self-placement process was introduced in Florida in 2015. Throughout the last year the success of the implementation of this alternative placement approach is being questioned because of the decreased enrollment in preparatory courses and the increased failure rate. The unfavorable success results are being attributed to the alternative placement practice. The findings presented in this study indicate the need to examine all of the factors that may lead to an increase in failure rates for college-level writing courses and beyond. The increased failure rate could be attributed to any one or many factors beyond students having the option to place themselves.

### Experiment to Measure Multiple Factors

A final research suggestion is a specific experimental study. This experimental study would seek to understand the effectiveness of the placement process by analyzing standardized placement exams and DSP as they relate to self-efficacy and confidence level. For this study the sample would be split into two groups: one group would be taken through the standardized placement exam and traditional placement process and the other group would complete the DSP process. The students in each group would complete a self-efficacy survey prior to completing the placement process and then after completing the assigned course. The results could then be

examined in terms of how the placement process and completion of subsequent course relate to the student's confidence level.

### Implications for Practice

The DSP process that is being utilized at this Midwestern university is a robust process that includes more than allowing students to bypass the preparatory writing course. Self-placement practices in lieu of traditional placement exams need to go beyond course selection. This study found that DSP choice, ACT score, and high school GPA taken together significantly predicted course grade. Integration of ACT score review and high school GPA into the DSP process could lead to positive results and increased course success in both the preparatory and college-level courses.

Based on the results of this study, recommendations are offered to institutions utilizing DSP or an alternative placement practices as well higher education as a whole.

1. Consider alternative placement methods that move beyond standardized placement exams. This study provides additional evidence that DSP can be used as an alternative method of placement for writing courses. Directed Self-Placement (DSP) is not the only alternative; moving beyond standard placement exams as the main driver for placement decisions will play a critical role for developmental education and student success now and in the future. Specifically, this study found that students placed themselves appropriately based on their previous performances. The findings did not indicate that students were over-placing themselves into the college-level course.

2. Consider prioritizing high school GPA over ACT or SAT score to make placement decisions. The results of this study align with the findings of Belfield and Crosta (2012) as their research indicates that GPA is a better predictor of success than ACT score.
3. Review all the factors that relate to student success in both preparatory and college-level first-year courses. Prior to determining the efficacy of a placement method or a developmental course it is important to consider all of the factors that impact student success. The results of this study provide additional evidence that the placement method alone is one of the complex aspects of the first-year college experience.
4. There is concern about moving away from standardized exams because they are nationally normed. Institutions can create internal norming using their own student results. This can be done using the results of the DSP process within the individual institution. The normed data set would be created by analyzing course success and persistence for students based on DSP choice, high school GPA, and ACT/SAT score to determine what is typical for students within the institution. The normalized data set can provide insight into not only how the DSP process is performing, but to inform students as part of the advisement prior to course selection.

### Conclusion

Starting the college journey can be intimidating for many students. Students beginning postsecondary study are often faced with multiple standardized exams. Students in many cases are required to provide a standardized entrance exam score as well as take additional placement exams to demonstrate college readiness. These standardized methods used for placement can impact college students who have low confidence. Particularly, students with low confidence



and below average previous performance in high school know they have deficiencies, and institutions require them to take tests to determine the level of deficiency and then place them into courses where they are unable to earn college credit. This is not a nurturing process and does not cultivate student success. The purpose of this study was to explore the relationships among DSP, student persistence and success in higher education. The results support the continued exploration of alternative approaches such as Royer and Gilles's (1998) DSP process. The findings of this study suggest that alternative placement exams need to be explored as a replacement to standardized entrance and placement exams. Specifically, the findings suggest that ACT score is not related to student success in pre-college or college-level-writing courses. The findings also suggest that high school GPA is a better indicator of not only student success but as a predictor of persistence as well.

It is imperative to the national agenda to improve persistence and success in the first-year in order to impact U.S. college completion rates. Student placement into preparatory or college-level courses determines what students will experience in terms of course work during that first year. Requiring students to take preparatory courses based only on results of a standardized exam may be affecting their abilities to be successful and persist into their second year. This study reinforces not only the idea that alternative placement exam options are worth exploring, but emphasizes the need to consider previous performance as part of the placement process for college freshman in the U.S. Further, in order to improve the student experience and increase student persistence and success for students in their first year of college, institutions need to move away from their dependency on using standardized exams to measure student readiness. The research and findings offered here indicate DSP is one alternative method to standardized

placement exams that should be considered across all institutions that place students into preparatory courses.

As discussed in Chapter 1, in 1990 the U.S. was ranked first in four-year degree attainment and in 2015 the country ranked 12th. This indicates a decline in this country's ability to produce college graduates. There are many factors that have led to this decline. One factor that is certainly a focus within the literature is persistence and success within the first year. This dissertation study specifically focused on providing an understanding on how the placement process and previous performance factors are related to student success and persistence within the first-year. In order for the U.S. to produce more college graduates and move up in the global college completion rankings it is necessary to increase success rates within the first year and persistence to second year. Using alternative placement methods as well as moving away from the dependency on standardized exams could be a solid place to begin this important effort.

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