

## **ABSTRACT**

### **PLACEMENT MEASURES IN DUAL CREDIT: A QUANTITATIVE STUDY**

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In response to the COVID-19 pandemic, the studied college broadened its eligibility criteria for dual credit to include an in-progress high school GPA. To determine whether the use of an-in progress GPA should be fully adopted as a placement measure, further study was needed. This quantitative study examined the relationship between the placement measures used before and during the COVID-19 pandemic and dual credit students' access to and performance in the gateway ENGL 101 course taken at Prairieland Community College.

Data were collected from a small community college in the Midwestern region of the United States retrospectively over the academic years 2015 and 2023. Descriptive statistics were collected and analyzed to identify trends in the enrollment data. Data indicated that the racial composition of students enrolled in dual credit ENGL 101 did not reflect the racial composition of the college or community college district; however, rates of participation among minoritized student populations increased once the in-progress high school GPA was used as a placement measure. The chi-square test of independence was used to determine a relationship between the dependent variable (ENGL 101 course outcome) and independent variable (placement measure used). Results of the chi-square test of independence indicated a statistically significant association between the placement measure used and the ENGL 101 course outcome. Several iterations of binary logistic regression analyses examined the probability of passing ENGL 101

with regards to the placement measure used, controlling for the covariates of race, biological sex, course delivery model, and academic year. In most iterations of the regression analyses, the researcher found a statistically significant difference in ENGL 101 course outcome between those students who used the ACCUPLACER as a placement measure, compared to those students who used an in-progress high school GPA. The covariates that demonstrated a statistically significant relationship with the probability of passing ENGL 101 included being Black/African American, enrollment in a section of ENGL 101 in which the college instructor taught at the high school, and the 2021 academic year. The other covariates demonstrated no significant relationship with the ENGL 101 course outcome.

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PLACEMENT MEASURES IN DUAL CREDIT: A QUANTITATIVE STUDY

BY

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## **DEDICATION**

To my husband, Nathan: I am thankful for the time you gave me to focus on my studies and the encouragement you provided me along the way. This dream was possible because you believe in me and love me. To my parents, Manuel and Rosario Barrientos: thank you for showing me how to work hard and how to continue pushing forward in life.

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## **PREFACE**

The aim of this dissertation of practice is twofold. Firstly, the study examined the enrollment trends of dual credit students enrolled in the gateway ENGL 101 course prior to and during the COVID-19 pandemic to note changes that occurred once the in-progress high school GPA was used as a placement measure. Secondly, a quantitative study using a correlational approach was conducted to examine the outcome of passing ENGL 101 among dual credit students at a small Midwestern community college. The subsequent chapters describe the research project, beginning with its inception at the dissertation proposal stage to the study's findings and the researcher's scholarly reflection of the process.

Chapter One is an artifact from the dissertation proposal defense, which was successfully defended in December 2022. Chapter One outlines the initial plans for conducting the study, the research questions, and the methods for execution. Using a publishable paper format, Chapter Two offers a report of the study's findings. Chapter Two details the methodology, outlines the study's findings, and discusses the implications for practitioners. Chapter Three is a scholarly reflection of the dissertation process and discusses the researcher's background in relation to the topic, highlights what was learned through the dissertation process, and describes the implications for future research and professional practice. Key lessons include the importance of practitioners examining the outcomes of decisions made to ensure equity and increasing the support of both students and instructors post-pandemic to address student disengagement and learning loss.

## **CHAPTER 1**

### **INTRODUCTION TO THE STUDY**

#### **Introduction**

According to Tobolowsky and Allen (2016), dual credit is a nebulous term that lacks a consistent definition; in the literature and among practitioners, dual credit can be referred to as dual enrollment, concurrent enrollment, and early college. For the purposes of this dissertation, dual credit refers to an instructional arrangement in which students receive both high school and college credit upon successful completion of an approved college-level class (Barnett & Andrews, 2002; Tobolowsky & Allen, 2016). Dual credit is commonly viewed as a mechanism to improve students' high school experiences, to prepare students for the transition to college, and to reduce college costs for students and their families (Allen & Dadgar, 2012; Garcia et al., 2020; Karp, 2012; Lile et al., 2018; Taylor, 2015).

In recent years, dual credit has increased dramatically. Taylor (2015) noted, "The practice of high school students earning college credit in the United States is a growing phenomenon as more colleges and high school partnerships provide students with an accelerated pathway to college (p. 356)." Citing the most recent federal data from the National Center for Education

Statistics, Field (2020) stated that high school student enrollment in college credit coursework increased by 68% from 2002 to 2010. In Fiscal Year 2020, 69,299 Illinois high school students participated in dual credit coursework (ICCB, 2021b). The Illinois Community College Board (ICCB) (2021a; 2021b) reported that student enrollment in dual credit has increased annually by 6.6% since fiscal year 2011 and currently represents 14.7% of all credit enrollment in Illinois community colleges. Nationally, more than 1.5 million high school students enroll in dual credit each year (Fink & Jenkins, 2021). At a time when many colleges are seeing a decline in overall enrollment, dual credit is a means by which colleges can meet their enrollment and financial goals. Depending on the financial arrangement within the district, a high number of enrolled dual credit students could provide much needed tuition and fees for community college districts.

Access to dual credit continues to increase as more states develop policies to regulate and expand access; however, student outcomes and success in dual credit are increasingly emphasized by stakeholders and policymakers (Taylor et al., 2015). To improve the likelihood of students' success and to meet regulating and accrediting bodies' requirements for enrollment, community colleges oftentimes require students to meet the same course eligibility requirements as traditional community college students (Taylor et al., 2015). Colleges commonly use standardized placement exams to streamline their enrollment practices and to assess students' readiness for college-level coursework; however, standardized placement exams have been criticized for underplacing students into unneeded developmental coursework and limiting access to college-level coursework, particularly for historically marginalized student populations (Ganga et al., 2018). In recent years, incorporating measures beyond a single, high stakes standardized placement test has been emphasized to reduce the number of students placing into

development education (Bickerstaff et al., 2021); however, little research has focused on how multiple measures are used to assess college readiness, access, and outcomes among dual credit students.

Placement testing was not feasible during the COVID-19 pandemic when states ordered their residents to shelter in place. As a result, COVID-19 presented an opportunity for institutions across the country to institute alternative methods to assess students' eligibility for dual credit (Fink et al., 2022). Williams and Perry (2020) noted that during the pandemic, states used multiple ways to determine students' eligibility for dual credit, including but not limited to high school attendance, interviews and personal statements, nominations from a teacher, and student self-recommendations. As institutions of higher education begin to move past the COVID-19 pandemic, it becomes increasingly important to examine institutional data to inform decisions regarding dual credit and eligibility criteria. Failing to examine institutional data and deciding to return to dual enrollment eligibility policies and practices used prior to the pandemic may have serious repercussions on states' and colleges' efforts to advance equity in access to dual credit (Fink et al., 2022).

### **Purpose Statement**

The purpose of this study is to examine the relationship between the placement measures used before and during the COVID-19 pandemic and dual credit students' access to and performance in the gateway ENGL 101 course taken at Prairieland Community College. Located in the Midwest, Prairieland Community College serves a small student body of less than 5,000

enrolled students. While the college has experienced a significant decline in overall enrollment, dual credit enrollment continues to increase annually, representing nearly a quarter of the college's overall credit headcount enrolment. High school students have multiple options in accessing dual credit coursework, including at their high schools, at the main college campus, and online. Historically, Prairieland Community College relied on standardized exams like the ACT, SAT or ACCUPLACER to determine eligibility for dual credit coursework; however, the COVID-19 pandemic presented an opportunity for Prairieland Community College to experiment with a more holistic definition of college readiness that included high school students' current high school GPA and recommendations from high school staff members. As college enrollment practices return to normal, it is important to understand how the modified college placement process affected dual credit students' access to and performance in college-level coursework. As the academic dean over disciplines and coursework that require eligibility for college-level English, my decisions regarding staffing levels, course prerequisites, and instructional modifications will be informed by collecting and analyzing student-level data related to placement measures, student outcomes, and equity.

This quantitative study will examine whether the use of different placement measures (i.e., the ACCUPLACER standardized placement exam versus the high school GPA) was related to dual credit students' course success in ENGL 101. A correlational research design will be used in this study, as there is no manipulation of the independent variable and the focus is on the statistical relationships between variables (Price et al., 2017). According to Creswell and Creswell (2018), the correlational design allows for the use of correlational statistics to describe

and measure the degree or relationship between two or more variables or sets of scores. The study will be guided by the following research questions:

- What were the descriptive statistics of dual credit enrollment in ENGL 101 by race-ethnicity prior to and during the COVID-19 pandemic?
- Is there a relationship between the placement measure used for dual credit and students' final course outcome in ENGL 101?
- Is there a relationship between dual credit students' placement measure and the final course outcome in ENGL 101 that varies by student characteristics, including race/ethnicity, biological sex, and course delivery model?

### **Literature Review**

According to the National Alliance of Concurrent Enrollment Partnerships (NACEP) (2021), 34% of U.S. high school students will complete a college course while in high school. Some states like Idaho, Indiana, and Iowa, exceed the national average in college course-taking rates among high school students (NACEP, 2021). As states have increased their policies and access to dual credit, researchers have increased their scholarly interest in how dual credit is executed, the benefits associated, and the concerns that require further study and intervention. The literature review will highlight both the benefits and disadvantages of dual credit that must be considered in expanding and improving dual credit opportunities for high school students.



## **The Benefits of Dual Credit**

The reviewed literature highlighted how dual credit benefits students, community colleges, and society. Accelerating students' access to dual credit is shown to increase students' aspirations and high school success rates while simultaneously aiding postsecondary institutions in recruitment and enrollment goals. Furthermore, dual credit increases the likelihood of college completion which is positively associated with higher income levels and economic contributions, both which benefit society.

### **Student Benefits**

The literature highlighted various ways that dual credit can enhance high school students' secondary school experience (Andrews, 2004; Hughes, et al., 2012; Lile et al., 2018). According to Andrews (2004), the expansion of dual credit can be linked to a growing national concern about the senior year of high school. For many students, the senior year can be a wasted one if students have fulfilled their graduation and college entrance requirements by the end of their junior year (Andrews, 2004). When students are disengaged from their high school experience, they not only stop learning, but they also stop preparing for college (Peterson, 2003). Witckowsky and Clayton (2020) found that high school counselors considered dual credit beneficial as it allowed students learning opportunities that they otherwise would not have at the high school. The high school counselors posited that dual credit introduced students to various academic and career options and increased students' self-confidence in pursuing a college degree

(Witckowsky & Clayton, 2020). As dual credit students increase their self-confidence and motivation, they also learn new academic strategies, which can contribute to higher high school GPAs and increased graduation rates (Hughes et al., 2012). Dual credit has been linked to increasing students' educational aspirations and keeping students engaged so that they are better prepared for college-level work (Andrews, 2004; Hughes et al. 2012; Peterson, 2003; Smith, 2007).

Dual credit can also serve as a postsecondary access point for high school students and can increase students' college readiness in both non-academic (Karp, 2012; Brown & Perry, 2022). Karp (2012) found participation in dual credit facilitates students' transition to higher education and college success by providing students an opportunity to learn the roles of a college student. As students learned their college student roles, they acquired both academic and non-academic skills needed for their transition (Karp, 2012). Karp (2012) posited that role-playing as a college student provided students an opportunity to learn and practice what was expected in the college classroom. Similarly, Lile et al. (2018) found that students had a better understanding of the college student role and expectations because of their participation in dual credit programs. In their study, Lile et al. (2018) explained that knowledge of college environment expectations can help ease students' transition to the traditional college experience and lead to more positive outcomes.

In addition, Taylor (2015) found that participating dual credit students were more likely to enroll in and complete college compared to peers who did not participate in dual credit programs. According to Taylor (2015), 91% of dual credit students enrolled in college compared to 63% of non-dual credit students who enrolled in college. Likewise, dual credit students

completed at a rate of 52%, compared to only 29% percent for non-dual credit students (Taylor, 2015). Lee et al. (2021) also found there was a strong relationship between taking at least one dual credit course and graduating from high school, enrolling in college, institutional choice, and persistence into the sophomore year of college for students in Nebraska. Of interest, Lee et al. (2021) found that the association between enrollment in one dual credit course and the studied outcomes was stronger among racial minority students, first-generation students, and low-income students. Although the positive association between dual credit and outcomes was not found to be statistically significant for Asian and African-American student groups, Lee et al. indicated that small sample sizes and participation rates among those high school student groups may be a contributing factor of the results. Allen and Dadgar (2012) found that a dual enrollment program reduced students' time to degree, increased the number of credits students took once they enrolled in college, and increased students' academic performance once in college. Reduced time to degree can lead to significant financial savings for families who may be concerned with the rising costs of higher education (Garcia, et al., 2020). High school students have the potential to reap many benefits from dual credit opportunities; however, their enrollment is also beneficial to the high school's partnering community college.

### **Community College Benefits**

Oftentimes, community colleges outline within their mission statements and strategic plans their commitment to external constituencies and partners. Through the coordination of dual

credit with their district high schools, community colleges can ensure they meet their districts' needs for additional learning opportunities for high school students. Formal partnerships, with mutual understanding of each party's responsibilities and expectations, can "allow for resource sharing, creation of joint educational programs, technology enhancements, and workforce preparation" (Amey, 2010, p. 13). Furthermore, partnerships can help community colleges broaden their outreach and help the institution achieve its strategic plan priorities and goals, especially as community college resources become scarcer (Amey, 2010). Hoffman et al. (2008) noted the positive impact community college and high school partnership can have on institutional practices. In addition to students, educational partnerships can ensure that financial and human resources are strategically identified and shared (Hoffman et al., 2008).

Community college and high school partnerships can also help ensure that the dual credit courses offered meet standards of quality and rigor (Hu & Chan, 2021). Dual credit provides an opportunity for community colleges and high schools to have ongoing and regular communication about college-level expectations, obstacles, and areas of needed improvement. These conversations and the evidence displayed in students' transcripts provide a feedback loop to high school faculty and administrators regarding curriculum alignment and ways to better prepare students for the demands of college-level coursework (Hoffman et al., 2008). Outlining the expectations and working on curriculum alignment helps not only the students planning to enroll in dual credit but can also help better prepare all students who may enroll at the college upon high school graduation.

Dual enrollment can also help community colleges meet their enrollment and financial goals. While high school enrollment dual credit represented 14.7% of community college

enrollment in Illinois, some community colleges reported high school enrollment as high as 39% of the total headcount (ICCB, 2021b). Depending on the financial arrangement within the district, a high number of enrolled dual credit students could provide much needed tuition, fees and state reimbursements for community college districts.

### **Societal Benefits**

Hoffman et al. (2008) asserted that many states have restructured dual credit to be more equitable and to provide access beyond just the academically advanced students. According to Hoffman et al. (2008), dual credit is key to improving high school students' college-going rates. Furthermore, dual credit can be instrumental in improving students' college completion rates (Adelman, 2006). According to Adelman (2006), a critical momentum point for incoming college students is completion of twenty or more credits by the end of their first year. High school students who acquire more college credits through dual credit opportunities are more likely to reach academic momentum and earn a postsecondary credential (Adelman, 2006).

Since the 2010s, college completion rates have received much attention and scrutiny by various stakeholders, non-profits, and presidential administrations (Karp, 2015). The completion agenda, as it commonly known, is focused on increasing the number of individuals with a postsecondary credential so that the United States can compete on an international level and build the skilled and educated workforce needed for a new economy (Blankenberger et al., 2017). According to Karp (2015), increasing the college completion rate is critical, as a high

school diploma is no longer sufficient for economic success at the individual or societal level. Karp (2015) cited various literature that reflects the positive impact credential completion has on wages and earnings, employment, and tax revenue. According to Williams and Perry (2020), “These [dual credit] programs can play a strong role in ensuring that states are poised for post-pandemic economic recovery with an educated, technically skilled workforce” (p. 2). Dual credit is recognized as a college completion strategy that can positively impact students during high school and upon transitioning to college to result in better outcomes for both the individual student and society (Karp, 2015).

### **Dual Credit Concerns**

The rapid expansion of dual credit has increased the likelihood that high school students will have an opportunity to access college-level coursework while still enrolled in secondary education. While dual credit is commonly promoted as a benefit for high school students and their families, there are also critiques of this instructional arrangement. The level of rigor, students’ access, and equity among student groups were common criticisms identified in the literature.

## **The Rigor of Dual Credit Courses**

While the benefits of dual credit for students are well-cited in the literature, students' future success and college completion depend on dual credit courses having the same rigor as traditional college courses (Ferguson et al., 2015). Questioning the rigor of dual credit coursework, some four-year universities are limiting the number of dual credit courses that can transfer into the institution (Field, 2020). In some cases, four-year universities will only accept the dual credit courses if they were taken at the community college and taught by the community college faculty member, despite research that indicates there is no significant difference in student outcomes based on the location of where dual credit was delivered (Field, 2020; Hu & Chan, 2021). Hu and Chan (2021) found that students who took one dual credit course on a college campus had no significant differences in college readiness, high school GPA, their probability of attending a postsecondary institution, or enrollment patterns compared to students who did not take a dual credit course on a college campus. Despite evidence indicating rigor in dual credit, students may be denied college credit at some institutions.

The quality of dual credit coursework is defined by how it transfers to senior institutions. According to Taylor et al. (2015), only about fifty percent of state policies address how dual credit coursework transfers. Without statewide transferability policies, Taylor et al. (2015) posited that senior institutions have the discretion to accept or deny dual credit coursework, compromising how students and their families perceive the quality of these learning opportunities. Dual credit can help students and their family save money if it shortens students' time to degree; however, when senior institutions deny the transferability of dual credit courses,

students may not reap the full benefits of taking college coursework when they are in high school.

Ferguson et al. (2015) argued that dual credit programs must be of “high quality and adequately prepare students to succeed in colleges and universities” (p. 90), but how quality is achieved can be difficult to articulate. Duncheon and Relles (2020) found that teachers often felt they received contradictory messages about content, teaching methods, and course rigor from supervisors at both the secondary and postsecondary institutions. Quality depends largely on high schools and community colleges formalizing their partnerships to outline each institution’s responsibilities in supporting academic rigor, faculty excellence, and student success (Barnett et al., 2004; Miller et al., 2017; Taylor et al., 2015).

### **Barriers to Access**

Access to dual credit has also been a common criticism found in the literature (Garcia et al., 2020; Gewertz, 2019; Taylor 2015). For example, low-income and students of color are less likely to participate in the dual credit opportunities and therefore, have limited access to the benefits cited above (Garcia et al., 2020). Garcia, et al., (2020) interviewed faculty, staff, and administrators at three different high schools. They found that participants often felt that tuition, fees, and books made dual credit coursework cost prohibitive for many students from low socioeconomic backgrounds. Spencer and Maldonado (2021) found state policy mandates tend to be strong predictors of overall dual credit participation; however, disparities continue to persist



particularly among schools that are in urban areas and enroll a greater number of minoritized student populations. Spencer and Maldonado (2021) also found that students from low-income backgrounds were less likely to participate in dual credit opportunities compared to their more affluent peers.

As noted above, Taylor (2015) reported that overall, students who participated in dual credit were more likely to enroll and complete college, but the effect was substantially smaller for low-income and students of color. Summarizing data from the U.S. Department of Education, Gewertz (2019) explained that Black and Latinx students are less likely to take dual credit compared to their White and Asian counterparts. One explanation for lower participation rates among Black and Latinx students may be colleges' overreliance on standardized placement exams.

### **Dual Credit Eligibility Requirements and Placement Measures**

Historically, community colleges have relied heavily upon standardized placement exam scores to determine students' college readiness in math and English (Bickerstaff et al., 2021). Based on students' test scores and institutions' respective cut-off scores, students are placed in either a developmental course sequence or deemed eligible to begin college-level coursework. Community colleges rely on standardized placement exams like ACCUPLACER because they are automated and allow institutions to place students efficiently and consistently in the appropriate coursework as an early step in the enrollment process (Bahr et al., 2019). However,

according to Barnett et al. (2020), standardized placement exams alone are inadequate to determine whether students are college ready or in need of developmental education. Conley (2007) asserted that standardized placement exams require students to recall fragmented information, but do not require students to apply their learning in a way that is demonstrative of college readiness.

Research has shown that standardized placement exams frequently place students in unneeded developmental education (Ngo et al., 2021; Scott-Clayton, 2012). Wyner (2014) summarized research that indicated that standardized placement exams forced 30 percent of students into unneeded developmental courses. Bailey (2009) argued that standardized placement exams measure only some of the skills needed for a successful college experience, while ignoring the other important, noncognitive skills students require for college success. Furthermore, there is questionable evidence that standardized placement exam scores are predictive of academic performance in coursework (Bailey, 2009; Scott-Clayton, 2012). Scott-Clayton (2012) determined that standardized placement test scores may be more predictive of math course grades than English course grades, but that the correlation of placement test scores in later course outcomes is weak overall. Bailey (2009) questioned the processes colleges and universities use to determine eligibility for college-level coursework. He stated, “The blizzard of assessments and cutoff scores suggests no consensus about what constitutes college ready or how to measure it” (p. 25). Although standardized placement exams make the enrollment process more efficient, they may not be indicative of students’ college readiness.

Assessing high school students’ college readiness is a key component of many states’ dual credit policies. Taylor et al. (2015) described how dual credit practices originated as local

agreements between high schools and their community college districts. As the demand for dual credit opportunities for students increased, state policies like Illinois' Dual Credit Quality Act emerged to regulate local practices (Taylor et al., 2015). Taylor et al., (2015) studied how state dual credit policies regulate and ensure quality. The researchers found that nearly 80% of states included policy language pertaining to students' eligibility for dual credit coursework (Taylor et al., 2015). In 25 states, Taylor et al. (2015) found that state policies included provisions that required colleges to use the same eligibility requirements for dual credit students as are required for college students. When colleges rely heavily on standardized placement exams to assess students' eligibility for dual credit, institutions may inadvertently limit dual credit opportunities to the most academically advanced students (Zinth & Barnett, 2018). Zinth and Barnett (2018) argued that middle-achieving students can succeed in dual credit if they are provided the right support.

Taylor et al. (2015) questioned whether states' and colleges' eligibility requirements are grounded in research and speculated that in many cases, the requirements may restrict access for students most in need of these educational opportunities. Black and Latinx students are students most likely to benefit from dual credit opportunities, but they may not show eligibility using traditional placement methods. If dual credit is to achieve the community college's mission of providing access to higher education, access should be equitable among student populations (Jones, 2017). Making access equitable among student populations will require institutions and states to reconceptualize their ideas of college readiness beyond a single, high stakes standardized placement exam. More states are beginning to recommend or require the use of multiple measures to appropriately assess and place students in their college coursework

(Bickerstaff et al., 2021). In 2016, North Carolina became the first state to adopt a high school GPA as a statewide measure for placement within the community college system (Bailey & Jaggars, 2016; Barbitta & Munn, 2018). Since then, many more states have followed. In their study of recent state and system-wide developmental education policy mandates in the United States, Hodges et al. (2020) found that 18 states had specific policies regarding the use of multiple measures. Multiple measures of assessment allow colleges to evaluate students' college readiness using one or more criteria (CCSSE, 2016).

According to Conley (2007), college readiness must be viewed holistically and consider students' content knowledge, academic behaviors, contextual skills and awareness, and key cognitive strategies. Several studies examined for this literature review used Conley's model of college readiness to examine students' outcomes once they transition to college (An & Taylor, 2015; Lile et al., 2018). If states are pushing for rigor, quality, *and* expanding access to students from underrepresented groups, it is important that college readiness for dual credit be examined using multiple measures. In their evaluation of the College and Career Readiness Expansion Project, Edmunds et al. (2022) argued for multiple strategies to expand access to dual credit, including limiting the emphasis on placement testing and developing alternative ways for students to show readiness for college courses. As Fink and Jenkins (2021) stated,

Given the scale at which dual enrollment currently operates, it would be a huge, missed opportunity not to rethink dual enrollment to expand college access, explicitly prioritize low-income and students of color, and connect students to high-opportunity postsecondary pathways -- especially those leading to bachelor's and graduate degrees (para. 7)

Using multiple measures will become increasingly important to expand access to students, particularly for historically underserved student populations.

## Conceptual Framework

This study is guided by Conley's (2007) model of college readiness and Kane's (2006) work on validation. First, David Conley's (2007) model of college readiness will assist in the selection of variables to be examined. Conley's (2007) work calls for a more comprehensive model of college readiness that includes students' content knowledge, along with academic behaviors, contextual skills and awareness, and key cognitive strategies. While standardized placement exams like the ACCUPLACER may measure students' cognitive skills in the content areas of mathematics, reading, and writing, they cannot measure other components of college readiness like student effort (Belfield & Crosta, 2012). High school GPA, however, can help explain content knowledge, along with students' mastery of academic behaviors. Cullinan et al. (2018) posited that the high school GPA is an aggregate measure of performance over multiple years and is indicative of both content knowledge and academic behaviors like attendance and participation.

Kane's (2006) work on validation asks practitioners to consider not only how a given placement measure may accurately predict students' outcomes, but to also examine the goals, uses, and results of the placement measure. Kane (2006) stated, "It is not the test itself that is validated, and it is not the test scores that are validated. It is the claims and decisions based on the test results that are validated" (p. 59-60). The key inferences and assumptions regarding placement testing lead to decisions on students' placement in the developmental or college-level track. In regards to placement testing, Scott-Clayton (2012) asserted that there should be a positive statistical relationship between test scores and grades in the target courses; however, validation requires the examination of arguments, decisions, and consequences of the placement

measures used. To justify course placement decisions, validation requires that decision makers demonstrate sufficient evidence of positive consequences compared to any negative consequences of using a particular placement measure.

The goal of placement measures like the ACCUPLACER and the high school GPA is to qualify those students most likely to succeed in a college-level course. To validate the use of these placement measures, it will be critical to examine the relationship between the placement measure and the course outcome. However, Kane (2006) suggested that users of such placement measures also consider the negative consequences associated with implementation. To validate the used placement measures, the study will examine whether the placement measures led to negative consequences as demonstrated by access and course outcomes among historically underserved student populations.

### **Research Design**

This study will use a correlational design to examine whether the placement measure used for dual credit is related to students' access to and success in the gateway English course. According to Christensen et al. (2013), nonexperimental quantitative research indicates that there is no manipulation of an independent variable. The purpose of this type of research is to "provide an accurate description of a particular situation or phenomenon or to describe the size and direction of relationships among variables" (Christensen et al., 2013, p. 60). This study seeks to determine whether there is a relationship between the placement measure used and how students accessed and performed in Prairieland Community College's ENGL 101 course.

### **Research Site**

This study will use student-level data of dual credit students enrolled at Prairieland Community College (a pseudonym) in a Midwest state between the academic years of 2015-2016 and 2022-2023. Prairieland Community College is a small community college with a main campus that includes ten academic and maintenance buildings on 155 acres. In addition to the main campus, Prairieland Community College offers courses at a satellite campus. Prairieland Community College's district comprises about 100,000 residents 16 years or older.

The college served more than 2,000 students in the fall 2021 semester. The racial ethnic makeup of the fall 2021 class at Prairieland Community College was 72% White/Non-Latino, 18% Black/African American, 3% Latino, 3% two or more races, 1% Asian/Pacific Islander, 3% other/no indication. According to state data, the college's female headcount in fall 2021 represented 64% of the student population compared to 36% males. The college also serves a large part-time student population. Seventy-six percent of students are enrolled part-time, compared to 24% who are enrolled full-time. The largest age group served by the college was the 17–20 demographic at 45% of the total headcount. Sixteen and younger represented 9% of the headcount, 21-24 represented 14% of the headcount, 25-30 represented 12% of the headcount, 31-39 represented 11% of the headcount, 40-55 represented 7% of the headcount and over 50 represented 1% of the headcount.

Since 2012, the college has experienced a 31% decrease in headcount enrollment; however, dual credit is an area that continues to experience growth. From fiscal year 2016 through fiscal year 2020, Prairieland Community College saw an 8.6% increase in dual credit headcount enrollment. In fiscal year 2020, dual credit headcount enrollment represented 24.4%

of the college's overall credit headcount enrollment. The college's district includes ten public school districts and five private school systems.

The college has agreements with fourteen high schools to provide dual credit in several formats. Prairieland Community College strives to make dual credit accessible by offering a streamlined half-day schedule of transfer courses offered on the main campus, sending adjunct instructors to high schools for a select number of transfer courses, providing online sections of transfer courses, and qualifying high school instructors with the appropriate credential to teach the curriculum designed by Prairieland faculty. Courses are taught at various locations and in various modalities, but the course content, quality, and academic rigor are intended to be the same as those classes taught on campus. To ensure students can meet the rigor and expectations of a college course and to meet regulating bodies' requirements, dual credit students must demonstrate the stated prerequisites as determined by the college's faculty.

### **Data Source and Sample**

The study will use secondary data from the college's Student Information System (SIS), which tracks students' enrollment in dual credit, demographics, placement measures, high school GPAs, and dual credit course grades. The data sample will consist of high school students enrolled in ENGL 101 as part of the dual credit opportunities available at Prairieland Community College between academic years 2015 and 2023. Eligible students can enroll in ENGL 101 as part of Prairieland Community College's dual credit sections offered at the high school, online sections that enroll both general students and dual credit students, or face-to-face sections that



enroll both general students and dual credit students. ENGL 101 was selected to narrow the sample and its status as a college gateway course. According to Koch (2017), gateway courses are foundational to students' educational pathways, have an elevated risk of non-completion, and have high enrollments for the institution. Any student wishing to complete a degree at Prairieland Community College must complete ENGL 101 as part of the degree requirements. ENGL 101 is a common dual credit course to include in the intergovernmental agreements with cooperating high schools.

Between the academic years 2015 and 2023, there were four primary placement measures used to qualify students for the ENGL 101 course. Students' with eligible ACT or SAT scores could place into ENGL 101 without further testing. For this study's purpose, the relationship between a college entrance exam and course success will not be examined. The traditional ACCUPLACER was used from 2015-2018, the Next Generation ACCUPLACER was adopted by the college in 2019. The COVID-19 pandemic presented challenges in doing mass testing at the high schools in academic years 2021 and 2022. As a stop-gap measure during the pandemic, Prairieland Community College expanded its measures of placement to include the in-progress high school GPA. Students could qualify for dual credit with either the required Next Generation ACCUPLACER test score or the minimum high school GPA and a letter of support from their high school English teacher. The temporary placement measure of the high school GPA and letter of support was extended into academic year 2023 to allow for further study. Between the academic years 2019 and 2023, Prairieland Community College's ENGL 101 enrolled approximately 300 students each year.

## Variables

The dependent variable to be examined in this study is the final grade in ENGL 101 and whether it can be classified as passing or not passing. To earn credit for ENGL 101, students must earn a “C” or better as indicated by the state’s transfer agreement. Since the dependent variable has only two values, it is considered a dichotomous and nominal variable (Frankfort-Nachmias et al., 2021).

The independent variables to be examined are the placement measures used to determine eligibility for ENGL 101, including the ACCUPLACER scores in reading and writing and the in-progress high school GPA. The placement measures are dichotomous and nominal variables with two possible values. When eligibility is determined by high school GPA, the independent variable is coded as 0. When eligibility is determined by ACCUPLACER scores, the independent variable is coded as 1. According to Frankfort-Nachmias et al. (2021), dichotomous variables must capture distinct data important to the research questions, such as the placement measure used and its relationship with the course outcome.

Control variables will also be used as part of this study. Frankfort-Nachmias et al. (2021) explained that control variables help the researcher to elaborate on the bivariate relationship and provides the researcher with alternative explanations of the relationships between the dependent and independent variables. The control variables to be used as part of this study include race, sex, and course delivery model. Table 1 describes the variables to be examined.

Table 1

## Proposed Description of Variables

	Description	Measure
Dependent Variable	Course Outcome	0 = Did not pass ENGL 101 1 = Passed ENGL 101
Independent Variable	Placement Measure	0 = HS GPA 1 = ACCUPLACER
Control Variable	Race/Ethnicity	1= American Indian/Unknown 2= Hispanic 3= Black or African American 4= Asian/Pacific Islander 5= Multiracial 6=White
	Biological Sex	1= Male 2= Female
	Course Delivery Model	1 = PCC by PCC instructor 2 = High school by PCC instructor 3 = Online by PCC instructor 4= High school by high school instructor

**Analytic Strategy**

This study will first examine descriptive statistics of the dual credit program at Prairieland Community College. To ensure that both access and outcomes are equitable among student populations, it is important to examine the demographic makeup of students enrolled before and during the pandemic and study students' academic outcomes. In addition to race-ethnicity, this study will examine other special population characteristics, such as sex, course delivery model, and type of high school.

A correlational research design will also be used in this study, as there is no manipulation of the independent variables and the focus is on the statistical relationships between variables

(Price et al., 2017). According to Creswell and Creswell (2018), the correlational design allows for the use of correlational statistics to describe and measure the degree or relationship between two or more variables or sets of scores. The statistical operations performed will be determined by the appropriate categorization of the variables studied (Frankfort-Nachmias et al., 2021). The researcher will begin the data analysis using a chi-square test to assess whether there is a significant relationship between the two nominal variables (Frankfort-Nachmias et al., 2021). The results of the chi-square test will help the researcher determine whether the ENGL 101 course outcome is independent or dependent of the placement measure. The second phase of data analysis will entail a test of multiple logistic regression. A multiple logistic regression test will allow the research to “estimate how several independent variables affect one dependent variable” (Frankfort-Nachmias et al., 2021, p. 401). As mentioned above, several factors will be used as control variables to provide alternate explanations to the potential relationships found between the independent and dependent variables.

### **Limitations**

There are several limitations of this study. Firstly, the grades students earned prior to and during the COVID-19 pandemic may be biased. The grades earned in dual credit impact students’ high school *and* college GPAs. Dual credit English composition courses also impact students’ high school graduation requirements. Failing grades in dual credit are not typical as it may affect students’ opportunities to graduate. Additionally, the COVID-19 pandemic may have contributed to instructors’ leniency in grading to accommodate the personal, mental, and

physical challenges students faced. Both these conditions may contribute to dual credit grades being subject to inflation.

Secondly, the quality of the data will need to be determined upon collection. The data available through the SIS depends on the data entry of employees in Student Success. Like many institutions of higher education, Prairieland Community College has experienced substantial turnover during the past few years. Whether and how relevant data were collected and recorded may require manual data cleaning.

Thirdly, missing data may further impact the size of the sample, presenting another limitation of the study. As mentioned above, Prairieland Community College is a small institution. The sample size will also be small which may limit the reliability and/or validity of the statistical tests performed.

### **Significance**

Dual credit continues to gain momentum as a mechanism to increase college-going and college completion rates. Not only are college access and completion important for the students, but it also ensures that society has the necessary workforce to fill positions that exceedingly require advanced training and education. Many states have enacted legislation to ensure students have access to college opportunities while in high school; however, legislation and policy often include language outlining eligibility requirements for students (Taylor et al., 2015). When colleges and universities use standardized placement exams as a sole measure of college-readiness, students who may benefit the most from dual credit may have limited access to these

educational opportunities. Examining whether placement measures impact students' access and success is a crucial step in increasing equitable outcomes for students from historically underserved student groups.

Fink et al., (2022) recently published an article addressing how dual credit placement policies enacted during the pandemic positively affected access for underrepresented students without significantly changing students' course outcomes. The authors argued for more institutions and states to examine their dual credit placement policies to ensure they center equity and access among students who would most benefit from getting a head start on college coursework. Examining institutional data will assist Prairieland Community College to make updates and changes that are data-informed and equity-centered.

The knowledge gleaned from this study may assist Prairieland Community College initiate conversations with their partnering high schools pertaining to increasing awareness and success in dual credit opportunities. Students may self-select not to participate in dual credit due to the testing requirement; however, sharing information about multiple measures and the benefit of dual credit can help address students' anxieties about attempting college-level coursework. Targeting students who may not be the most academically advanced but still likely to benefit from dual credit can help more students see themselves as college material. To ensure high school students have the greatest opportunity of success, Prairieland Community College and its high schools can identify and share the needed resources and support. Sharing aggregated and disaggregated student data and outcomes is critical for the continued improvement of the dual credit program at Prairieland Community College.

Although the benefits of dual credit are promoted among both high schools and community colleges, the rigor and quality of college coursework taken by high school students are questioned by critics. An important topic to consider for further research is to investigate how students who participated in dual credit at Prairieland Community College performed once they entered four-year university. Obtaining this data can help the institution improve its current practices or provide evidence to students and families regarding the academic benefits associated with dual credit. The findings from this study will inform stakeholders in their decision-making as they look to continue, discontinue, or modify the course placement process to include a more holistic definition of college readiness.

## **CHAPTER 2**

### **PLACEMENT MEASURES IN DUAL CREDIT: A QUANTITATIVE STUDY**

#### **Introduction**

Students and their families, community college leaders, and state legislatures view dual credit as an effective strategy to address concerns of rising college costs, declining college enrollment, and decreasing completion rates (Allen & Dadgar, ,; Garcia et al., 2020; Karp, 2012; Lile et al., 2018; Taylor, 2015). Dual credit allows students to receive both high school and college credit upon successful completion of an approved college-level class (Barnett & Andrews, 2002; Tobolowsky & Allen, 2016). The number of students taking advantage of dual credit opportunities is evident in the rapid increase of students enrolled. Field (2020), using federal data from the National Center for Educational Statistics, posited that high school student enrollment in college credit coursework increased by 68% from 2002 to 2010. According to Fink and Jenkins (2021), more than 1.5 million high school students enroll in dual credit each year. Meanwhile, in Illinois, student enrollment in dual credit represents 14.7% of all credit enrollment in Illinois community colleges (ICCB, 2021b). The practice of taking college coursework while



in high school is often viewed positively as a mechanism to accelerate and expand students' access to a college credential (Adelman, 2006).

The COVID-19 pandemic posed serious budgetary concerns for community colleges as student enrollment plummeted. According to Sedmak (2021), community colleges experienced an enrollment decline of 9.5% in fall 2020 and 11.3% in spring 2021. However, community college enrollment had been declining even prior to the pandemic. According to the American Association of Community Colleges (AACC) (2019), community college enrollment had been declining from 2001 to 2017 among all age groups except those students under 18 taking dual credit coursework. Knox (2022) described the dual credit enrollment during the pandemic as “bailing out many two-year institutions that have taken on water” (para 4). The National Student Clearinghouse (2023) attributed the recent, modest enrollment increase of 2.1% at community colleges to the strong enrollment of dually enrolled high school students.

States have prioritized dual credit expansion in recent years; however, stakeholders and policymakers also increasingly emphasize the importance of dual credit students' outcomes and success (Taylor et al., 2015). To ensure students have the skills needed to be successful in college-level coursework, many states have mandated that institutions assess students' college readiness through standardized placement exams (Bickerstaff et al., 2021). However, standardized placement exams like the ACCUPLACER have limited predictability of student success and fail to capture the important noncognitive skills students require for college success (Bailey, 2009; Barnett et al., 2020; Scott-Clayton, 2012). Zinth and Barnett (2018) asserted, “State-set requirements for dual enrollment eligibility may be indirectly undermining efforts to get more high-schoolers on a pathway to college” (p. 1). Too often, capable students are diverted to unneeded developmental education due to overreliance on standardized placement exams that

capture students' abilities to recall fragmented information but fail to assess students' other college-readiness skills (Conley, 2007; Ngo et al., 2021; Scott-Clayton, 2012).

Zinth and Barnett (2018) promoted alternative eligibility criteria that could be used to assess dual credit students' readiness for college-level coursework, including the consideration of students' high school GPA. The COVID-19 pandemic forced many community colleges to suspend their placement testing requirements and to determine dual credit students' course eligibility on multiple measures, including the high school GPA (Fink et al., 2022). Community colleges and other institutions of higher education are now faced with the question of how they will place students in dual credit coursework post-pandemic and whether temporary measures used during a pandemic should be adopted permanently. Colleges and universities will need to study the impact the multiple measures had on students' access to dual credit and students' success to inform future decision-making.

The purpose of this quantitative study was to examine the relationship between the placement measures used before and during the COVID-19 pandemic and dual credit students' access to and performance in the gateway ENGL 101 taken at Prairieland Community College (PCC), controlling for sex, race, delivery model, and academic year. Prior to the COVID-19 pandemic, PCC relied heavily on standardized placement exams like the ACT, SAT, and ACCUPLACER to determine dual credit student's eligibility for college-level coursework. Although the college had adopted the multiple measures agreed upon by various state councils and commissions, using high school students' current GPA was not the college's standard practice for dual credit placement. However, during the height of the pandemic, high school students had limited opportunities to complete placement testing or college admission exams. As a result, the college allowed for students to demonstrate college readiness using an in-progress

high school GPA of 2.75 or higher (on a 4.0 scale), accompanied by recommendations from high school staff members.

As the college considers whether the in-progress high school GPA should be adopted permanently as a placement measure for dual credit, further investigation is needed to determine placement measures' relationship with positive student outcomes. This quantitative study will examine whether the use of different placement measures (i.e., the ACCUPLACER standardized placement exam versus the high school GPA) was related to dual credit students' access to dual credit and course success in ENGL 101. The study will be guided by the following research questions:

- What were the descriptive statistics of dual credit enrollment in ENGL 101 by race prior to and during the COVID-19 pandemic?
- Is there a relationship between the placement measure used for dual credit and students' final course outcome in ENGL 101?
- Is there a relationship between dual credit students' placement measure and the final course outcome in ENGL 101 that varies by student characteristics, including race, biological sex, course delivery model, and academic year?

### **Literature Review**

This study was grounded in the literature on dual credit expansion. It is estimated that approximately 34% of U.S high school students will complete a college course while also enrolled in high school (National Alliance of Concurrent Enrollment Partnerships, 2021). This expansion is the result of states increasing their policies to promote access to dual credit.

Likewise, researchers have increased their scholarly interest in how dual credit is executed, the benefits associated with this instructional model, and the concerns that require further study and intervention. This literature review highlights both the benefits and disadvantages that must be considered in expanding and improving dual credit opportunities for students.

### **The Benefits of Dual Credit**

There are increasing concerns that the senior year of high school is oftentimes a wasted one for students who are proactive in completing their graduation and college entrance requirements by the end of their junior year (Andrews, 2004). Concerned that secondary students may disengage from their high school experience and fail to adequately prepare for the college transition, state legislatures have enacted policies to expand dual credit and simultaneously enhance students' secondary school experiences (Andrews, 2004; Hughes et al., 2012; Lile et al., 2015; Peterson, 2003; Taylor et al., 2015). With dual credit, students' senior year can thus be an opportunity for students to participate in learning opportunities they would not otherwise have at their high schools (Witckowsky & Clayton, 2020).

In addition to dual credit increasing students' content knowledge and academic skills, participation in dual credit has also been linked to increasing students' self-confidence and motivation, educational aspirations, college readiness skills in non-academic areas, and students' understanding of the college student role and future college-level expectations (Andrews, 2004; Brown & Perry, 2022; Hughes et al. 2012; Karp, 2012; Lile et al., 2018; Peterson, 2003; Smith, 2007; Witckowsky & Clayton, 2020). As dual credit students role-play as college students, they have an opportunity to learn and practice what is expected in the college classroom (Karp, 2012).

For dual credit students, the opportunity to learn the demands and rigor of a college coursework is linked to greater rates of enrollment in and completion of college compared to students who did not participate in dual credit (Taylor, 2015). According to Taylor (2015), 91% of dual credit students enrolled in college compared to 63% of non-dual credit students who enrolled in college. Likewise, dual credit students completed at a rate of 52%, compared to only 29% percent for non-dual credit students (Taylor, 2015). Students' positive outcomes may be a result of what Adelman (2006) coined "academic momentum."

Completion of twenty or more credits by the end of students' first year of college has been shown to provide students the academic momentum needed to earn a postsecondary credential (Adelman, 2006). Prior to or during their traditional freshman year, students who participated in dual credit may attain the twenty or more credits shown to be related to college completion. For racial minority students, first-generation students, and low-income students, taking at least one dual credit course was found to be strongly associated with high school graduation, college enrollment, and college persistence (Lee et al., 2021). Furthermore, the more college credits students complete as part of a dual credit arrangement, the fewer courses students must enroll in after high school graduation, reducing the time to degree and the cost of college (Allen & Dadgar, 2012; Tobolowsky & Allen, 2016). For students who have been historically underserved, the reduced time to degree and reduced college costs can help address families' and students' concerns of rising higher education costs (Garcia et al. 2020).

Community colleges, often the main provider of dual credit coursework, have long been committed to providing students and families with affordable options for higher education. Dual credit arrangements with district high school partners help ensure community colleges are meeting their own mission statements, while simultaneously meeting the need for additional

learning opportunities for high school students. Through formal partnerships, both the high school and community college can agree upon each party's responsibilities and expectations, allowing for "resource sharing, creation of joint educational programs, technology enhancements, and workforce preparation" (Amey, 2010, p. 13). As community college resources become scarcer, formal partnerships with district high schools can help colleges broaden their outreach, meet their strategic plan priorities and goals, improve their institutional practices, and share financial and human resources (Amey, 2010; Hoffman et al., 2008).

Ongoing conversations between community colleges and their partnering high school districts can also lead to a mutual understanding of college-level expectations, obstacles, and areas of improvement (Hoffman et al., 2008). Regular review of course outcomes, student data, and concerns can help ensure that the dual credit courses meet standards of quality and rigor (Hu & Chan, 2021). Additionally, regular review of program data can serve as a feedback loop to high school faculty and administrators regarding curriculum alignment and ways to build needed college readiness skills and knowledge to better prepare high school students for the demands of college (Hoffman et al., 2008). Curriculum alignment efforts assist not only those students planning to enroll in dual credit, but also prepare all students who may enroll in college after high school graduation. More collaboration among high school and community college partners can positively impact community colleges' enrollment efforts. As mentioned above, some community colleges have become dependent on dual credit students to meet their financial goals (Knox, 2022; National Student Clearinghouse, 2023).

Because dual credit is linked to higher rates of college enrollment and completion, states stand to benefit from a more educated workforce (Adelman, 2006; Hoffman et al., 2008; Karp 2015). According to Blankenberger et al. (2017), the United States' economy and ability to

compete on the international level will require a skilled and educated workforce. A high school diploma is no longer sufficient for economic success at the individual or societal level (Karp, 2015). States' dual credit policies and practices can serve as a college completion strategy to boost outcomes for both individual students and society (Karp, 2015). Individuals with a postsecondary credential will benefit from higher wages and earning potential, while the economy and society will benefit from a skilled and educated workforce that will aid the post-COVID-19 pandemic recovery (Karp, 2015; Williams & Perry, 2020).

### **Dual Credit Concerns**

Although dual credit is linked to the many benefits accrued by students, their families, community colleges, and society, the instructional arrangement is not without its critics. Common criticisms identified in the literature include questionable academic rigor, limited student access, and inequities among student groups. Understanding the concerns held by stakeholders and experts is important to consider in the potential expansion of dual credit.

Dual credit students will excel academically at the college-level if their academic experiences in dual credit courses are as rigorous as the traditional courses (Ferguson et al., 2015). Ferguson et al. (2015) argued that dual credit programs must be of "high quality and adequately prepare students to succeed in colleges and universities" (p. 90), but how quality is achieved can be difficult to articulate. Formal partnerships that outline each institution's responsibilities in supporting academic rigor, faculty excellence, and student success can signal to four-year universities the care was taken to ensure dual credit students' academic experiences

match those of traditional college students (Barnett et al., 2004; Miller et al., 2017; Taylor et al., 2015).

When academic rigor is questioned, senior institutions may limit how dual credit transfers. In some cases, particularly in states without transferability policies pertaining to dual credit, four-year universities may reject dual credit courses if they were not taken at the community college and taught by a community college faculty member (Field, 2020; Taylor et al. 2015). Despite research that indicates no significant relationship between the location of where dual credit was delivered and students' college readiness, high school GPA, probability of college enrollment, or enrollment patterns, concerns of academic rigor and limited transferability may outweigh the potential benefits of dual credit (Field, 2020; Hu & Chan, 2021; Taylor et al., 2015).

Another concern among scholars are issues regarding access to dual credit among historically marginalized or underserved student populations. Fink (2018) found that White, female, and Asian students are more likely to participate in dual credit opportunities. Lee et al. (2022) asserted, "a participation gap exists between students from more advantaged backgrounds and students from less advantaged backgrounds, the latter typically being racial minority students, first generation students, and low-income students" (p. 826). When historically underserved student groups have lower rates of dual credit participation, they have limited access to the benefits listed above (Garcia et al., 2020; Gewertz, 2019; Lee et al., 2022; Taylor, 2015). Garcia et al. (2020) found that faculty, staff, and administrators often felt that tuition, fees, and books made dual credit coursework cost prohibitive for students with limited financial means. Location may also contribute to lower rates of dual credit participation among minoritized student populations. Spencer and Maldonado (2021) found that schools in urban areas, which



tend to enroll a greater number of low-income and minoritized student groups, have lower rates of dual credit participation compared to more affluent schools. For rural areas, students may also have limited access to dual credit opportunities due to the lack of qualified dual teachers, insufficient technology or broadband internet access, and limited financial resources to pay for tuition, book, and fees (Lee et al., 2022).

Overreliance on standardized placement exams may contribute to lower participation rates among low-income and minoritized student groups. Black and Latino students are more likely to be placed on the developmental education track, which may explain their lower participation rates in dual credit compared to their White and Asian student counterparts (Abrahamson & Richmond, 2019; Gewertz, 2019). Unfortunately, community colleges have historically relied upon standardized placement exams to efficiently and consistently determine students' readiness in math and English (Bahr et al., 2019; Bailey, 2009; Bickerstaff et al., 2021). The process of measuring student readiness for dual credit is oftentimes mandated in states' dual credit policies and requires institutions to use the same eligibility requirements for dual credit as required for traditional college students (Taylor et al., 2015). However, critics of standardized placement exams assert that tools like the ACCUPLACER are inadequate in determining students' skills abilities beyond fragmented information related to content knowledge (Barnett et al., 2020; Conley, 2007). In some cases, research indicated there was limited evidence that standardized placement exam scores were predictive of academic coursework (Bailey, 2009; Scott-Clayton, 2012). Too often, standardized placement exams direct students into unneeded developmental courses and limit dual credit opportunities to only the most academically advanced students, while restricting access for students most need of these educational opportunities (Ngo et al., 2021; Scott-Clayton, 2012; Taylor et al., 2015; Zinth & Barnett, 2018).

Recognizing the limitations and disadvantages associated with standardized placement exams, more states are mandating that colleges adopt multiple measures to appropriately assess and place students in their college coursework (Bickerstaff et al., 2021). Hodges et al. (2020) found that 18 states had instated policies that require colleges to use multiple measures of assessment, including the use of a high school GPA for course placement. Multiple measures allow colleges to assess students' college readiness using one or more criteria and can consider factors beyond content knowledge such as academic behaviors, contextual skills and awareness, and key cognitive strategies (An & Taylor, 2015; CCSE, 2016; Conley, 2007; Lile et al., 2018). The use of multiple measures will become increasingly important for expanding dual credit access to low-income and students of color (Edmunds et al., 2022; Fink & Jenkins 2021). To ensure changes in eligibility criteria do not negatively impact students' access to and outcomes in dual credit, community colleges must study how changes in eligibility requirements affect students' access and success.

### **Conceptual Framework**

Conley's (2007) model of college readiness and Kane's (2006) work on validation guided the conceptual model used for this study. Conley's (2007) model of college readiness assisted in the selection variables examined. Conley's (2007) work called for a more comprehensive model of college readiness that includes students' content knowledge, along with academic behaviors, contextual skills and awareness, and key cognitive strategies. Standardized placement exams like the ACCUPLACER are useful in measuring students' cognitive skills in the content areas of mathematics, reading, and writing; however, they have limited ability in measuring other

components of college readiness like student effort (Belfield & Crosta, 2012). High school GPA, however, has been found to help explain content knowledge, along with students' mastery of academic behaviors. High school GPA is considered as an aggregate measure of performance over multiple years and is indicative of both content knowledge and academic behaviors like attendance and participation.

Kane's (2006) work on validation asks practitioners to consider the goals, uses, and results of a placement measure, in addition to its predictability of student outcomes like success. Kane (2006) stated, "It is not the test itself that is validated, and it is not the test scores that are validated. It is the claims and decisions based on the test results that are validated" (p. 59-60). The key inferences and assumptions regarding placement testing lead to decisions on students' placement in the developmental or college-level track. In regard to placement testing, Scott-Clayton (2012) asserted that there should be a positive statistical relationship between test scores and grades in the target courses; however, validation requires the examination of arguments, decisions, and consequences of the placement measures used. To justify course placement decisions, validation requires that decision makers demonstrate sufficient evidence of positive consequences compared to any negative consequences of using a particular placement measure.

Because students' eligibility for and access to dual credit is dependent on placement measures like the ACCUPLACER and the high school GPA, it is critical to examine whether evidence exists to support and validate the continued use of these measures. The study examined the relationship between the placement measure and the course outcome, controlled by the variables of race, sex, course delivery model, and academic year. Using Kane's (2006) work, I considered the positive and negative aspects associated with both placement measures, as

demonstrated by access and course outcomes among historically underserved student populations.

### **Research Design**

This study used a correlational design to examine whether there was a relationship between the placement measure used and how dual credit students performed in Prairieland Community College's (PCC) ENGL 101 course. Descriptive statistics of the dual credit students attempting ENGL 101 during the examined timeframe were also collected, organized, and analyzed to determine enrollment patterns before and during the implementation of the high school GPA as a placement measure.

### **Research Site**

This study used student-level data of dual credit students enrolled at PCC in a Midwest state between the academic years of 2015 and 2023. The academic year includes the summer and fall semesters of the previous calendar year and the spring semester (e.g. Summer 2014, Fall 2014, and Spring 2015). PCC is a small community college with a main campus that includes ten academic and maintenance buildings on 155 acres. PCC's district is comprised of approximately 100,000 residents 16 years or older from seven different counties.

The college served over 2,000 students in the fall 2022 semester. The racial ethnic makeup of the fall 2022 class at PCC was 68.6% White/Non-Latino, 24.2% Black/African American, 4.1% Hispanic, 1.6% Asian/Pacific Islander, 1.4% American Indian/Other/Unknown.

Although there has been a slight shift in demographics in the most recent academic year, the college generally reflects the demographics of the district it serves. The largest school district resides in a county that is 74.8% White, 18.3% Black/African American, 2.6% Hispanic, 1.3% Asian/Pacific Islander, 3.4% Multiracial, and 0.3% American Indian (United States Census Bureau, 2022). According to state data, the college's female headcount in fall 2022 represented 64.3% of the student population compared to 35.7% males. The college also serves a large part-time student population. Seventy-five percent of students are enrolled part-time, compared to 25% who are enrolled full-time. At 49% of the total headcount, the largest age group served by the college was 19 and younger. Twenty to 24 represented 18.1% of the headcount, 25-34 represented 17.6% of the headcount, 35-39 represented 5.3% of the headcount, 40-44 represented 3.5% of the headcount, 45-55 represented 5% of the headcount and over 56 represented 1% of the headcount.

Since 2012, the college has experienced a 31% decrease in headcount enrollment; however, dual credit is an area that continues to experience growth. From academic year 2016 through academic year 2020, PCC saw an 8.6% increase in dual credit headcount enrollment. In academic year 2020, dual credit headcount enrollment represented 24.4% of the college's overall credit headcount enrollment. Dual credit students enrolled at PCC are also enrolled at one of the service region's ten public school districts or five private school systems.

The college has agreements with fourteen high schools to provide dual credit in several formats. Prairieland Community College strives to make dual credit accessible by offering a streamlined half-day schedule of transfer courses at the main campus, by sending adjunct instructors to high schools for a select number of transfer courses, by providing online sections of transfer courses, and by qualifying high school instructors with the appropriate credential to

teach the curriculum designed by Prairieland faculty. Courses are taught at various locations and in various modalities, but the course outcomes, quality, and academic rigor are intended to be the same as those classes taught on campus. To ensure students can meet the rigor and expectations of a college course and to meet regulating bodies' requirements, dual credit students must demonstrate the stated prerequisites as determined by the college's faculty and published in the college catalog.

### **Data Source and Sample**

The study used secondary data from the college's Student Information System (SIS), which tracks students' enrollment in dual credit, demographics, placement measures, high school GPAs, and dual credit course grades. The overall data sample consisted of 2,461 high school students who attempted ENGL 101 as dual credit at PCC between academic years 2015 and 2023. Student-level data were pulled, which included high school students who took dual credit at their high school, online, or face-to-face at the community college through a streamlined schedule. ENGL 101 was selected to narrow the sample and as its status as a college gateway course. Gateway courses are characterized as foundational to students' educational pathways, have an elevated risk of non-completion, and have high enrollments for the institution (Koch, 2017). ENGL 101 is a common dual credit course for students to take in high school, as it meets the high school English IV requirement and meets a communication requirement for the transfer compact agreement.

The purpose of this study was to examine whether there was a relationship between the placement measure used and the course outcome. Although dual credit students may use a

college entrance exam (e.g., ACT or SAT) for course placement, this study narrows the subpopulation to those students who were placed either by the standard placement exam (ACCUPLACER) or by their in-progress high school GPA. The in-progress high school GPA did not become a commonly used placement measure until 2017, therefore academic years 2015 and 2016 were omitted from the subpopulation.

### **Variables**

This study examined one dependent variable representing students' academic outcome in ENGL 101 and whether it could be classified as passing or not passing. To earn credit for ENGL 101, students must attain a "C" or better as indicated by the state's transfer compact agreement. The dependent variable is considered a dichotomous and nominal variable as it has only two values (Frankfort-Nachmias et al., 2021). Students who earned a "D", "F" or "W" in ENGL 101 were coded as "0" in the data set. In total, 6% of students in the subpopulation were coded as not passing and 94% of students were coded as passing.

The independent variable examined was the placement measure used to determine students' eligibility for ENGL 101, including the ACCUPLACER scores in reading and writing and the in-progress high school GPA. The placement measures are dichotomous and nominal variables with two possible values. When eligibility was determined by high school GPA, the independent variable was coded as 0. When eligibility was determined by ACCUPLACER scores, the independent variable was coded as 1. The placement measure and its relationship to the course outcome were pertinent data to answer the research question with only two possible values (Frankfort-Nachmias et al., 2021).

Control variables were also used as part of the study to assist me in providing alternative explanations of the relationships between the dependent and independent variables (Frankfort-Nachmias et al., 2021). Research suggests that access to dual credit may be inequitable among minoritized student populations. Furthermore, questions of academic rigor within dual credit based on course delivery model have also been raised. The control variables to be used as part of this study include race, sex assigned at birth, course placement measure, academic year, and course delivery model. See Table 2 for the control variable descriptions and how the variables were coded.

### **Analytic Strategy**

For Research Question 1, the study examined descriptive statistics of the dual credit program at Prairieland Community College. The data set for the descriptive statistics included all students who enrolled in ENGL 101, regardless of the placement measure used to determine the student's eligibility. There were 2,461 students who enrolled in ENGL 101 between academic years 2015 and 2023. To understand the racial composition of dual credit students in ENGL 101 prior to and during the COVID-19 pandemic, I looked specifically at longitudinal trends over multiple academic years. Microsoft Excel was used to organize the data. Although conclusions



Table 2

## Study Variables and Coding

	Description	Measure
Dependent Variable	Course Outcome	0 = Did not pass ENGL 101 1 = Passed ENGL 101
Independent Variable	Placement Measure	0 = HS GPA 1 = ACCUPLACER
Control Variable	Race	1= American Indian/Unknown 2= Hispanic 3= Black or African American 4= Asian/Pacific Islander 5= Multiracial 6=White
	Biological Sex	1= Male 2= Female
	Course Delivery Model	1 = PCC by PCC instructor 2 = High school by PCC instructor 3 = Online by PCC instructor 4= High school by high school instructor
	Academic Year	2017 2018 2019 2020 2021 2022 2023

regarding whether the added placement measure of the high school GPA was related to enrollment changes cannot be determined, enrollment trends can help practitioners understand the context of the change and reference it during future decision-making.

The complete data sample was narrowed to focus on those students who placed into ENGL 101 using either the ACCUPLACER placement exam or an in-progress high school GPA between academic year 2017 and 2023. 1,240 high school students were placed into ENGL 101 using one of these two measures. Descriptive statistics were also reviewed for the data sample; however, for Research Question 2, I used a chi-square statistic to determine whether there was a relationship between the placement measure used (i.e., ACCUPLACER or High School GPA) and students' final course outcome in ENGL 101. The chi-square statistic was used to assess whether there is a significant relationship between the two nominal variables and to determine whether the ENGL 101 course outcome was independent or dependent of the placement measure. SPSS was used to perform the statistical test.

Research Question 3 was answered using a test of binary logistic regression to determine the significance of whether different independent variables could predict the probability of a student passing the ENGL 101 course during the period studied. Several factors were used as control variables to provide alternate explanations to the potential relationships found between the independent and dependent variables. The control variables included race, biological sex, course delivery model, course placement measure, and academic year. To conduct the binary logistic regression, the race and course delivery model variables were converted to dummy variables, using only zeros and ones (Field, 2009). The biological sex and

course placement measure did not require transformation as they were already coded as binary variables. The course outcome and control variables were entered into the initial logistic regression model; however, one dummy variable from the race and one dummy variable from the course delivery method categories were omitted from the model. The omitted variables of “White” in the race category and “High school by high school instructor” in the course delivery method category served as the model’s reference groups to which the remaining groups in those categories were compared, as they had the greatest number of students enrolled. SPSS was used to perform the logistic regression tests.

### **Limitations**

One limitation of the study was the quality of the data. The data available through the Student Information System depends on the data entry of employees in the Student Success division. Like many institutions of higher education, Prairieland Community College experienced substantial turnover during the past few years. Additionally, course placement measures were modified in response to the pandemic and data recording processes were not fully conceptualized before students were enrolled in courses. While the student information system allows for the entry of exam scores, there was not a field for the in-progress high school GPA. Success coaches were instructed to do a course authorization to document that students met the prerequisite in an alternate way; however, the course authorizations were not consistently entered into the system. Fortunately, the dual credit student success coach had kept an Excel spreadsheet of all students she had registered who qualified for ENGL 101 based on their high school GPA and letter of recommendation. A course authorization code was created and retroactively entered

for those students included in the spreadsheet. The course authorization code allowed for students' placement measures to be adequately pulled into the data request and were later coded for SPSS; however, there were at least 340 records that had inaccurate coding or missing codes. In some cases, assumptions were made as to how the student was placed into the course.

The small sample size is another limitation of the study. The current high school GPA has only been used as an acceptable placement measure in the last two academic years. In previous years, the high school GPA was used at the academic dean's discretion. As a result, there are limited data available to the researcher. Although the sample size for statistical tests was small, it did meet the assumptions of the statistical tests used. A larger sample size for this study would have improved the statistical power of the results; however, for institutional research purposes, statistical tests like these can help leaders make decisions that are data informed.

Lastly, the grades students earned prior to and during the COVID-19 pandemic may be biased and not reflect students' abilities or potential. The grades earned in dual credit impact students' high school *and* college GPAs. Dual credit English composition courses also impact students' high school graduation requirements. Failing grades in dual credit are not typical as it may affect students' opportunities to graduate high school. Additionally, the COVID-19 pandemic may have contributed to instructors' leniency in grading to accommodate the personal, mental, and physical challenges students faced. Both conditions may contribute to dual credit grades being subject to inflation.

## Results

In this section, the results regarding the descriptive findings, chi-square test, and the multiple logistic regression models are presented.

### Descriptive Statistics

Table 3 provides descriptive statistics for the complete dataset of dual credit students who enrolled in ENGL 101 between 2015 and 2023. Of the 2,461 dual credit students included in the overall student population, 1,567 students listed female as their assigned sex at birth (64%), compared to 894 who listed male as their assigned sex at birth (36%). The racial composition of dual credit participants included 2,117 White students (86%), 135 Black/African American students (5.5%), 68 Hispanic students (2.8%), 37 Asian/Pacific Islander students (1.5%), 71 Multiracial (2.9%), and 33 American Indian/Unknown (1.3%). Dual credit students enrolled in ENGL 101 attempted the course primarily at their high school, taught either by their high school instructor (33.7%) or a PCC instructor (46.7%). Students were less likely to have taken ENGL 101 at PCC (15.4%) or online (4.2%). Most students were placed into ENGL 101 using a valid ACCUPLACER score (51.6%). There were 286 students (11.6%) who had no placement measure on record and 475 students who had a placement measure on record, but the data was not entered correctly to be captured in the data pull (19.3%). The high school GPA was only used to place 10.97% of students. Students' course outcomes reflect that 2,311 students passed ENGL 101 with a "C" or greater (93.9%), compared to 150 (6.1%) students who did not pass.

Table 3 also includes the descriptive data of the narrowed sample population of 1,240 students, which considers only those students who placed into ENGL 101 with an ACCUPLACER score or high school GPA between academic years 2017 and 2023. The female to male ratio of the subpopulation closely resembles that of the overall student population. Between academic years 2017 and 2023, students who placed into ENGL 101 with either the ACCUPLACER score or high school GPA included 803 students who listed female as their assigned sex at birth (65%) and 437 students who listed male as their assigned sex at birth (35.2%). The racial composition of students in the subpopulation also closely mirrored the overall student sample population. The subpopulation included 1,044 White students (84.2%), 77 Black/African American students (6.2%), 42 Hispanic students (3.3%), 19 Asian/Pacific Islanders students (1.2%), 45 Multiracial students (3.3%), and 21 American Indian/Unknown students (1.6%). Similar to the overall student sample population, students were more likely to take ENGL 101 at their high school, either through a high school instructor (42.4%) or a PCC instructor (37.9%). Students were less likely to take ENGL 101 at PCC (14.35%) or online (5.3%). The high school GPA was used to place 269 of students in the narrowed sample (21.7%), while the ACCUPLACER placed 971 students (78.3%). Students' course outcomes reflect that 1,149 of students passed ENGL 101 with a "C" or greater (92.7%), compared to 91 students who did not pass (7.3%).

Table 3

## Demographic Characteristics of the Overall Student Population and Sub Sample

	Full Sample (2015-2023)	Sub Sample (2017-2023)
Sample Characteristics	Percent	Percent
Gender		
Female	64.0%	65%
Male	36.0%	35.2%
Race		
White	86.0%	84.7%
Black/African American	5.5%	6.0%
Hispanic	2.8%	3.0%
Asian/Pacific Islander	1.5%	1.5%
Multiracial	2.9%	3.1%
American Indian/Unknown	1.3%	1.5%
Delivery Model		
H.S. by H.S. Instructor	33.7%	42.4%
H.S. by PCC Instructor	46.7%	37.9%
PCC by PCC Instructor	15.4%	14.4%
Online by PCC Instructor	4.2%	5.3%
Placement Measure		
ACCUPLACER	51.6%	78.3%
ACT Score	0.7%	
H.S. GPA	11.0%	21.7%
No Placement Record	11.6%	
Placement Record with No Data	19.3%	
SAT Score	5.9%	
Course Outcome		
Passed ENGL 101	93.9%	92.7%
Did not pass ENGL 101	6.1%	7.3%
<b>Number of Observations</b>	2,461	1,240

Figure 1 displays the racial composition of students enrolled in ENGL 101 by academic year. White students have made up the majority of students enrolled in ENGL 101 during the seven years studied. At rates above 80% each year, White students are overrepresented in ENGL 101 compared to the college demographics and district demographics. Over the last five years, Black/African American students represented approximately 20% of the PCCs student population; however, Black/African American students only represented approximately 6% of the ENGL 101 population between academic years 2017 to 2023. Black/African American students' participation in ENGL 101 is disproportionate to the racial composition of the college and district; however, their rates of participation did increase annually between 2019 and 2022. Hispanic, Asian American, and Multiracial student groups also had higher rates of participation between 2019 and 2022 than the previous four years.

### **Chi-Square Analysis**

A chi-square test of independence was conducted to analyze the relationship between the placement measure and dual credit students' course outcome in ENGL 101. Chi-square test results are presented in Table 4. Results of the chi-square statistic indicated a statistically significant association between the placement measure used and the course outcome,  $\chi^2 (1) = 10.49$ ,  $p = .001$ . The association was small (Cohen, 1988), Cramer's  $V = .092$ . From these results, we can reject the null hypothesis that there is no relationship between the two variables and accept the alternative hypothesis that the placement measure used is weakly associated with the course outcome, based on the value of Cramer's  $V$  as an effect size measure.



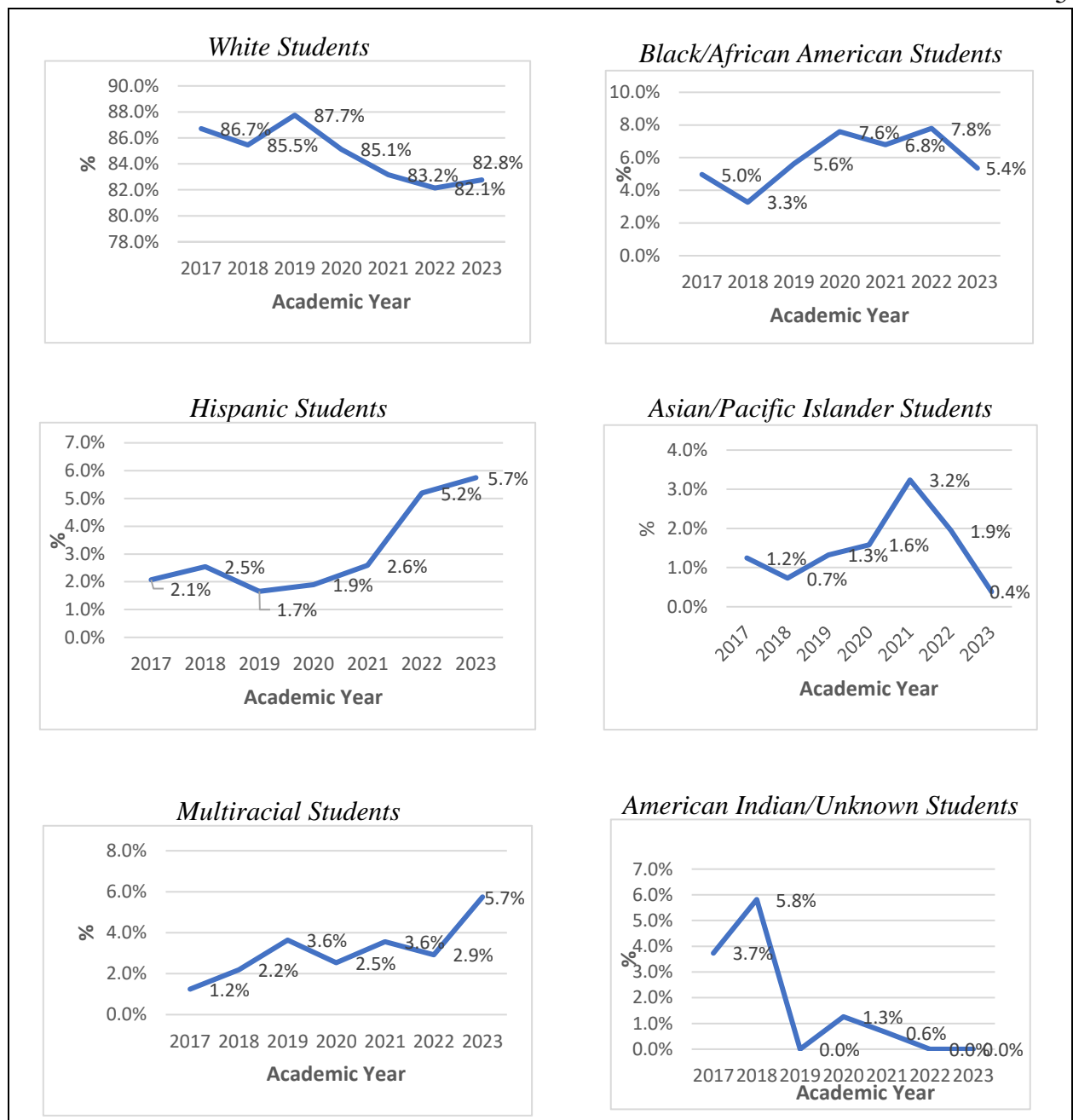


Figure 1: ENGL 101\_Dual Credit Student Enrollment– AY 2017-2023 by Race

Table 4

## Chi-Square Analysis of ENGL 101 Placement Measure and Course Outcome

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.49	1	.001
Likelihood Ratio	13.23	1	.001
N of Valid Cases	1,240		

The successful course completion rate for students who placed into ENGL 101 using an ACCUPLACER score between academic years 2017 and 2023 was 93.9% compared to students who placed into ENGL 101 using the high school GPA. On average, students who placed into ENGL 101 using a high school GPA between academic years 2017 and 2023 had a lower course completion rate of 88.1%.

### Logistic Regression Analysis

Table 5 presents the results of the binary logistic regression that was performed to determine the relationship between course placement method, biological sex, race, delivery model and the likelihood that participants passed ENGL 101. Results suggested that the overall binary logistic regression model was statistically significant,  $\chi^2(10) = 28.001, p < .05$ . The model explained 5.5% (Nagelkerke  $R^2$ ) of the variance in course outcome and correctly predicted 92.7% of cases. The Hosmer and Lemeshow test had a  $p$ -value of .665, indicating that the model possessed an overall goodness of fit.

Placement measure, being Black/African American, and the course delivery method in which the dual credit course was taken at the high school with a PCC Instructor were statistically and significantly associated with students' probability of successful course completion in ENGL 101. The coefficient of placement measure was statistically significant ( $B = 0.77, OR = 2.17, p < .05$ ), indicating that students who placed into ENGL 101 with an ACCUPLACER score were associated with an increased odds of successful course completion by 117% when compared to students who placed into ENGL 101 with an in-progress high school. The coefficient of Black/African American category of race was significant ( $B = -1.09, OR = 0.34, p < .05$ ), suggesting that Black/African American students were 64% less likely to complete the course, when compared with White students. The course delivery method category in which the PCC instructor taught at the high school was also significant ( $B = -0.54, OR = 0.59, p < .05$ ), indicating that this course delivery model was associated with a decreased odds of successful course completion by 41%, relative to students taking ENGL 101 at their high schools with their high school instructors.

Table 5

*Logistic Regression Results for Course Outcome*

Predictor	<i>B</i>	<i>Odds Ratio</i>	<i>SE</i>	95% CI	
				LL	UL
Placement Measure	0.77	2.17*	0.25	1.33	3.52
Sex	0.27	1.31	0.23	0.84	2.06
American Indian/Unknown	18.35	93251651.10	8910.64	.000	
Hispanic	-0.64	0.53	0.50	0.20	1.42
Black/African American	-1.09	0.34*	0.34	0.17	0.65
Asian/Pacific Islander	0.09	1.10	1.05	0.14	8.50
Multiracial	-0.42	0.96	0.62	0.28	3.24
PCC by PCC Instructor	-0.06	0.95	0.38	0.45	1.99
HS by PCC Instructor	-0.54	0.59*	0.26	0.36	0.97
Online by PCC Instructor	-0.35	0.71	0.51	0.26	1.91
Number of Observations			1,240		

*Note.* \*  $p < .05$ .

The high school GPA was not commonly used as a placement measure before 2020; however, I was interested to see whether the same predictors were statistically significant to students' probability of passing ENGL 101 prior to the COVID-19 pandemic. I conducted a multiple logistic regression that examined only those cases that occurred before academic year 2020. The White students served as the reference group for the race category as it had the greatest number of students enrolled. Likewise, the delivery model in which the high school teacher taught the dual credit course at the high school served as the reference group for the delivery model as it had the greatest number of students enrolled. There were 634 cases included

in the analysis. The overall model was not statistically significant when compared to the null model,  $\chi^2 (10) = 16.30, p = .09$ .

Table 6 presents the results of the binary logistic regression conducted for cases that occurred in academic year 2020 and thereafter to assess the relationship between course placement measure, biological sex, race, delivery model, and the likelihood that participants passed ENGL 101. The White students served as the reference group for the race category as it had the greatest number of students enrolled. As above, the delivery model in which the high school teacher taught the dual credit course at the high school served as the reference group for the delivery model as it enrolled the greatest percentage of students. There were 786 cases included in the analysis. Results suggested that the overall multiple logistic regression model was statistically significant,  $\chi^2 (10) = 21.44, p < .05$ . The model explained 5.9% (Nagelkerke  $R^2$ ) of the variance in course outcome and correctly predicted 91% of cases. The Hosmer and Lemeshow test had a  $p$ -value of .71, indicating that the model possessed an overall goodness of fit.

Placement measure, being Black/African American, and taking the class in high school with a PCC Instructor were statistically and significantly associated with students' probability of successful course completion in ENGL 101. The coefficient of placement measure was significant ( $B = 0.63, OR = 1.88, p < .05$ ), suggesting that students who placed into ENGL 101 with the ACCUPLACER score were associated with an increased odds of successful course completion by 88%, when compared to students who placed into ENGL 101 based on an in-progress high school GPA. The coefficient of the Black/African American category of race was significant ( $B = -1.04, OR = 0.35, p < .05$ ), indicating that Black/African American students were 65% less likely to successfully complete ENGL 101 when compared with White students. The

coefficient of course delivery method in which the PCC instructor taught at the high school was also significant ( $B = -0.58$ ,  $OR = 0.56$ ,  $p < .05$ ), suggesting that this delivery model is associated with a decreased odds of successful course completion by 44%, relative to students taking this course in high school taught by high school instructors.

Table 6

*Logistic Regression Results for Course Outcome for AY 2020 and After*

Predictor	B	Odds Ratio	SE	95% CI	
				LL	UL
Placement Measure	0.63	1.88*	0.27	1.11	3.21
Sex	0.35	1.42	0.26	0.85	2.36
American Indian/Unknown	18.56	114993380.30	19702.31	.000	
Hispanic	-0.66	0.52	0.52	0.19	1.42
Black/African American	-1.04	0.35*	0.38	0.17	0.75
Asian/Pacific Islander	-0.10	0.90	1.07	0.11	7.33
Multiracial	0.18	1.20	0.76	0.27	5.28
PCC by PCC Instructor	0.55	1.73	0.56	0.58	5.13
HS by PCC Instructor	-0.58	0.56*	0.29	0.32	0.98
Online by PCC Instructor	-0.33	0.72	0.52	0.26	1.99
Number of Observations				786	

*Note. \* $p < .05$ .*

Table 7 presents the results of the binary logistic regression when including academic year as a variable. As indicated above, the high school GPA was not commonly used to place students into ENGL 101 until the pandemic required the institution to adopt a new measure for dual credit students. The White students served as the reference group for the race category as it had the greatest number of students enrolled. As previously mentioned, the delivery model in which the high school teacher taught the dual credit course at the high school served as the reference group for the delivery model as it had the greatest number of students enrolled. For this particular model, 2023 served as the reference group for the academic year. Results revealed that the overall regression model was statistically significant,  $\chi^2(16) = 57.21, p < .001$ . The model explained 1.1% (Nagelkerke  $R^2$ ) of the variance in course outcome and correctly predicted 92.4% of cases. The Hosmer and Lemeshow test had a  $p$ -value of .90, indicating that the model possessed an overall goodness of fit.

Being Black/African American, taking the class in high school with a PCC instructor, and the 2021 academic year were statistically and significantly associated with students' probability of course completion in ENGL 101. The coefficient of the Black/African American category of race was significant ( $B = -1.17, OR = 0.31, p < .05$ ), indicating that being Black/African American student lowered the odds of successful course completion by 69%. The course delivery method category in which the PCC instructor taught at the high school was also significant,  $B = -0.57, OR = 0.56, p < .05$ , indicating that this delivery model decreased the odds of successful course completion by 44%. The coefficient of Academic Year 2021 was significant,  $B = -1.40, OR = 0.25, p < .05$ , indicating that the Academic Year 2021 decreased the odds of successful course completion by 75%.

Table 7

*Logistic Regression Results for Course Outcome including Academic Year*

Predictor	B	Odds Ratio	SE	95% CI	
				LL	UL
Placement Measure	0.31	1.37	0.31	0.75	2.50
Sex	0.29	1.33	0.23	0.84	2.11
American Indian/Unknown	18.21	81013356.53	8746.18	.000	
Hispanic	-0.60	0.55	0.52	0.20	1.52
Black/African American	-1.17	0.31*	0.35	0.16	0.62
Asian/Pacific Islander	0.23	1.26	1.06	0.16	10.03
Multiracial	-0.82	0.92	0.64	0.26	3.21
PCC by PCC Instructor	-0.10	0.91	0.39	0.42	1.95
HS by PCC Instructor	-0.57	0.56*	0.26	0.34	0.94
Online by PCC Instructor	-0.34	0.71	0.51	0.26	1.94
AY 2017	0.07	1.08	0.47	0.43	2.69
AY 2018	0.33	1.39	0.51	0.51	3.75
AY 2019	0.48	1.62	0.51	0.60	4.39
AY 2020	0.37	1.45	0.47	0.58	3.61
AY 2021	-1.40	0.25*	0.37	0.12	0.51
AY 2022	-0.26	0.77	0.41	0.34	1.74
Number of Observations			1,240		

*Note.* \*  $p < .05$ .



## Discussion

The purpose of this quantitative study was to review the demographic composition of dual credit students enrolled in ENGL 101 before and after Prairieland Community College adopted the high school GPA as a placement measure. In addition, this study sought to determine whether there was a relationship between the placement measure used and the likelihood of students successfully completing ENGL 101 when considering various variables. Prior research has demonstrated the limited predictability of standardized placement exams and the need to use multiple measures to determine students' college readiness (Edmunds et al., 2022; Fink & Jenkins 2021; Ngo et al., 2021; Scott-Clayton, 2012; Zinth & Barnett, 2018). While more states are adopting the high school GPA as a placement measure, this study contributes to the limited body of literature on how multiple measures are used in determining eligibility for dual credit gateway courses and raises some concerns.

State reports indicate that the racial demographics at the college and in ENGL 101 have started to shift in recent years. While Black/African American students are starting to enroll in the college in greater numbers; they are underrepresented in the institution's dual credit ENGL 101. The racial composition of dual credit students who took ENGL 101 at the college has been and continues to be predominately White students. Dual credit has long been criticized for perpetuating racial inequities and limiting access for students who can most benefit from these educational opportunities (Fink & Jenkins, 2021; Zinth & Barnett, 2018). It is important that practitioners understand the demographics of their dual credit students and investigate the barriers that may limit or broaden limited access.

Prior to the COVID-19 pandemic, the dual credit enrollment coach coordinated on-site placement testing at the high school for large groups of students. Unfortunately, on-site placement testing became infeasible due to government shelter-in-place orders. The added placement measure of the high school GPA, accompanied by a teacher recommendation, was adopted during the COVID-19 pandemic to provide an alternate pathway for course placement that did not involve in-person placement testing. The data suggest that adopting the high school GPA as a placement measure may be related to increased access to ENGL 101 among historically underserved student populations like Black/African American and Hispanic students. While the percentage of Black/African American and Hispanic students did not reflect the racial composition of the community college or its district, there were modest increases in their representation in dual credit ENGL 101 once the high school GPA placement measure was adopted. Relying less on standardized placement exams can help ensure students from minoritized groups can access the benefits associated with dual credit opportunities (Edmunds et al., 2022; Fink & Jenkins 2021). While access is an important pillar of the community college mission, decision-makers must also validate their policies and practices by studying both the positive and negative consequences related to the adoption of a new placement measure (Kane, 2006).

Results of this study suggest Black/African American students had a decreased probability of success in the ENGL 101 course. It is not enough to simply grant access to Black/African American students; practitioners must also be committed to providing the wrap-around supports and academic enrichment services that students may need to achieve similar rates of success as their White student counterparts. Closing equity gaps related to course outcomes will require that college and high school instructors and administrators work together

to find solutions to inequitable course outcomes. Amey (2010) stated that partnerships among the secondary and postsecondary partners can aid in discussions on strategic plan priorities and student outcomes. Critical to these conversations will be discussion on the non-cognitive abilities and skills students need to possess before enrolling in college-level coursework and identifying ways to build that skill base for pre-dual credit students. Using Conley's (2007) model of college readiness, instructors and administrators should center ways to build not only students' content knowledge through academic alignment, but also explore ways to build students' academic behaviors, contextual skills and awareness, and key cognitive strategies.

College instructors should be prepared to contribute to conversations on college readiness, particularly as the logistic regression models indicated that taking a dual credit ENGL 101 at the high school with a college instructor was associated with a decreased probability of success. While location of dual credit may not impact later pathways and outcomes of students who enroll (Hu & Chan, 2021), high school students will only reap the later benefits of dual credit if they successfully complete the course. For many high school students, taking a course at their high school is the only option available due to limited transportation or scheduling conflicts. Concerns with dual credit often cite the lack of rigor associated with such courses. This finding suggests that college instructors teaching dual credit ENGL 101 at the high school maintain high standards that some students may find difficult to meet. By sharing their perspectives on college readiness, skills and abilities, and expectations, college instructors may help high school teachers understand how to better prepare students for the college experience.

Key to these discussions is the possibility that students may need more time to develop their content skills, behaviors, and attitudes before attempting college-level coursework (Johnson et al., 2020; Kegan, 2005; Springer et al., 2015; Wecker & Wilde, 2020) The emphasis on early

college experiences discredits the learning and growth that many students can still benefit from while in high school. Having additional instruction and practice in academic reading and critical thinking can help ensure students have the ability to take on multiple viewpoints simultaneously, think about topics abstractly, navigate complex and difficult texts, and self-manage their time and motivation for difficult tasks – abilities and skills needed for a successful transition to college (Johnson et al., 2020; Kegan, 2005; Springer et al., 2015; Wecker & Wilde, 2020). High school is an opportunity to build college-readiness skills, yet too often administrators and parents seek college-level experiences for their students. While the literature highlights the many benefits associated with dual credit, students also have opportunities to develop their knowledge and skills in the fourth year of English offered at the high school.

Extra practice in reading and writing at the high school-level may be what students need most (Ison et al., 2022; Springer et al., 2015) According to Ison et al. (2022), dual credit students enrolled during the pandemic faced greater levels of anxiety, took on extra responsibilities at home, and had their learning disrupted by a major life event that required many to learn in unfamiliar modalities. Students coming out of the COVID-19 pandemic may have high school GPAs that are inflated and therefore not accurate reflections of their knowledge, abilities, or skills. Students may struggle academically in college-level courses like ENGL 101 as they acclimate to instructors' assignments, expectations, and workload. For those students who do enroll in ENGL 101, they will need the support of both their high schools and colleges. Key to their success will be the collaboration of the two systems in identifying resources and support services to bolster students' chances of success.

Current literature on dual credit highlights the benefits associated with students taking dual credit (Allen & Dadgar, 2012; Andrews, 2004; Hughes, et al., 2012; Karp, 2012; Lee et al.,

2021; Lile et al., 2018; Peterson, 2003; Smith, 2007; Taylor, 2015; Witckowsky and Clayton, 2020). As college becomes increasingly more expensive, dual credit is positioned to continue thriving as an academic opportunity available to students as part of their high school experience. While there is a call to adopt alternative eligibility criteria to assess students' readiness for college-level coursework; there is limited research on the outcomes of implementing such measures like the in-progress high school GPA as a placement method. This study suggests that a standardized placement exam like ACCUPLACER is associated with increased odds of successful course completion for students, compared to students who placed into the course based on their in-progress high school GPA. However, reverting back to using standardized placement exams or college entrance exams like the SAT may limit access for those students positioned to benefit from these educational opportunities.

### **Recommendations**

Practitioners should be prepared to examine their own student data to decide whether the increased probability of success outweighs limited access to dual credit among historically underserved student populations. While students may have an increased likelihood of success if placed into ENGL 101 with a standardized placement exam, omitting the in-progress high school GPA may limit access to dual credit for those students who would most benefit from the learning opportunity. I recommend extending the use of the in-progress high school GPA as a placement measure to allow the institution to assess whether the relationship between the high school GPA and students' outcomes changes as the after-effects of the pandemic subside. The institution may

also want to consider how to use the in-progress high school GPA as part of a holistic assessment of college readiness.

Knowing dual credit students' backgrounds, including their strengths and areas of improvement, is critical to developing the programming and interventions that may be required to support students' academic experience. The demographic data currently collected at the institution for dual credit students are limited. Collecting additional information such as students' college generation status, income level, and work patterns can help the institution refine its outreach and support services, as well as aid in future studies of students' outcomes.

Data collection and analysis are also needed to assess the value of the institution's dual credit experience. As practitioners, it is important that we work with our institutional research offices or colleagues to set up the data collection methods and analytic strategies to assess changes and their impacts. It is through the partnership with our data colleagues that we can strengthen our evidence-based decision making, which will ultimately lead to improved policies, procedures, and practices for the benefit of our many stakeholders, especially our students. Furthermore, it is through the analysis of institutional data that practitioners can examine both the positive and negative consequences of their decisions and validate the eligibility requirements put in place.

## **CHAPTER 3**

### **SCHOLARLY REFLECTION**

I have spent my entire professional career in higher education. From my entry-level position as an admission counselor at a private four-year university to a mid-level administrative position at a public two-year college, I have always approached my work with curiosity and a desire to improve myself and the experiences of the students I serve. I applied that same curiosity and pursuit of self-improvement to my doctoral studies. The advantage for students who pursue a doctorate degree while remaining active in their field of study is that every course reading, discussion, and assignment relates to their work. My doctoral studies required me to consider my current challenges, issues, and successes from new perspectives and with different questions. I approached the dissertation process as another way to lean into my innate curiosity and to learn more about two topics that continuously arise in my work – placement testing and dual credit. This scholarly reflection will focus on how I selected my topic, my dissertation writing experience, application of my findings to professional practice, and implication future research.

## Topic Selection

Dual credit has long been an area of interest for me. As part of my master's program, I participated in an internship experience at the college where I am currently employed. Under the supervision of my internship mentor, I co-taught a college success course that provided high school students an opportunity to earn college credit while they learned about the college transition, gained knowledge about college resources, and developed the study skills and habits to be successful. This course was offered to high school seniors of diverse backgrounds on the high school's campus during evening hours. Through the dual credit experience, these students had the opportunity to see themselves as college material, while also receiving foundational learning from which to develop the contextual skills and awareness needed to successfully transition into higher education. Conley (2007) argued that through contextual skills and awareness, students can gain access to privileged information that helps students understand a college's culture, systems, and actors. With this information, students can navigate the complexities, processes, and structures that may become barriers in one's transition to college. As the current Dean of Liberal Arts at my institution, many dual credit course offerings fall under my administrative purview. I work closely with our Dean of Student Success and Enrollment Coach to ensure the courses are scheduled, instructors are assigned, and teaching is rigorous and meets college and state standards. I work closely with my faculty to ensure they have the support and resources needed to teach the curriculum and provide students with an exceptional college classroom experience. I also serve as a primary contact for both the instructor and high school administrators when student issues or concerns arise.



In 2019, the college adopted the use of a high school GPA as a placement measure in accordance with the Illinois Council of Community College Presidents, the Illinois Community College Chief Academic Officers Commission, the Illinois Community College Chief Student Services Officers Commission, and the Illinois Mathematics Association of Community Colleges. However, we did not extend the use of high school GPA to current high school students. We justified the decision by asserting that the high school GPA was not yet complete for dual credit students, therefore it did not provide the evidence needed to deem a student ENGL 101 eligible. The college maintained the status quo for placing dual credit students by relying on a standardized placement exam or standardized college entrance exam to determine students' college readiness. More ambiguous standards like the high school GPA were not considered as a placement measures until the other measures were no longer readily available.

The COVID-19 pandemic presented many challenges for colleges across the country, but it also provided an opportunity to experiment and improve processes for students, faculty, and staff. By adopting the current high school GPA as a placement measure for dual credit, the college could maintain its enrollment of dual credit students; however, I knew that in order to continue this practice beyond the pandemic, descriptive and quantitative data would need to be collected and analyzed to inform any future decisions made. As a member of the assurance argument team for accreditation, I knew I would need to “use information on student retention, persistence, and completion of programs to make improvements as warranted by the data” (Higher Learning Commission, 2020, p. 5). The forced pilot of using the high school GPA for dual credit placement provided me a problem of practice that directly impacted my work as the Dean of Liberal Arts.

## Reflections on the Dissertation Process

I never imagined I would begin a doctoral program during the initial months of a world-wide pandemic that would disrupt both my personal and professional life. In some ways starting the Ed.D. program in June 2020 was a blessing. Due to the mandated shelter-in-place orders, I began working from home. During that first year of the program, I remained at home and had considerably fewer meetings due to colleagues' discomfort with the virtual meeting platforms. During the past eighteen months, life has returned to more normal conditions and with that, in-person meetings are back and seem to take up most of my working day. Balancing writing with full work days has been challenging, but not insurmountable. One of the benefits of working in higher education is the number of vacation days. I have been using more vacation days recently to reach my personal dissertation goals and have stayed accountable for my progress by meeting regularly with my dissertation advisor, Dr. Hu.

I was strategic during the program by learning more about topics that impacted my work at the college. While I did use course assignments to learn about such topics as guided pathways, integrated education and training, and higher education benefits for undocumented students, I focused many of my papers on dual credit and developmental education. Much of the research I reviewed on dual credit discussed the positive aspects of the educational arrangement. It was difficult to find critiques on dual credit; the critiques tended to focus on limited access due to costs and eligibility criteria. As a result of my developmental education research, I knew there was increasing pressure from state legislatures to incorporate multiple measures to place students in college-level coursework; however, there was scant research on how this was being conducted for dual credit populations.

Last summer during our time at the Naperville NIU campus, I narrowed my dissertation topic to placement measures within dual credit. Initially, I had considered a mixed methods study, but faculty repeatedly reminded us of the challenges involved. At that time, I had just learned of my direct supervisor's impending retirement at the end of 2022. Knowing that her departure would cause anxiety, restructuring, and possible upheaval, I decided to go with a quantitative study. I was assigned extra responsibilities as a result of her retirement which would have made a qualitative or mixed method study difficult to manage due to the time commitment required. However, a quantitative study presented its own set of challenges.

While I took a statistics course in my undergraduate program and completed the introduction to quantitative methods as part of my doctoral studies, I still felt as if I did not have a clear understanding of how to formulate my research question, select my variables, and code my research. Fortunately, my dissertation chair was extremely helpful in helping me to understand my study and what would be required. She boosted my confidence, directed me to useful resources, and answered all of my questions as they arose. I also requested assistance from a statistician at the college who helped me import my data into SPSS, set up the statistical tests, and make sense of the results. She was extremely helpful and patient with me, which was comforting since I am most definitely not a statistician.

My colleague at the college is a wealth of knowledge when it comes to statistics. She previously served as part of an institutional research team; however, the team was dissolved in 2019 and neither a team nor an individual was charged with assuming institutional research responsibilities. Having a person or persons involved with institutional research would have helped me form my research questions, consider how to properly code data for future use, set-up the statistical tests, and analyze the data for decision-making. If institutions are to move towards

evidence-based decision making, more training opportunities for practitioners are needed to help the college in prioritizing their data needs, help stakeholders in data collection and analysis, and direct campus researchers to existing data sets (Lipka, 2011; Morest, 2009).

The two most difficult aspects of the dissertation process were the data and the time required to collect and code the data, analyze it, and write chapter 2. While conversations at the college often center on how we will measure the outcomes of particular actions or decisions, we are not always effective in developing the actual process needed to collect the data conduct assessment. In 2021, we made the decision to implement the high school GPA combined with a letter of recommendation as a placement measure for high school students seeking entry to dual credit. Unfortunately, we did not determine how we would code these students within the Student Information System to be able to differentiate them from students who placed by more traditional measures. I had written my dissertation proposal not knowing that it would be very difficult to collect the data needed to answer my research questions if students had not been coded accurately in the system. Fortunately, my current administrative assistant formerly worked in enrollment services and knew that there had been an internal spreadsheet used to track the students who were placed using their high school GPA. Working with the Administrative Information Systems (AIS) office, they retroactively entered course authorizations for the specified students so that this marker could be pulled in the data request. The final data report I received had gone through five iterations as a result of my questions for clarification. Once I finally had a data set I was ready to work with, I spent several days reviewing the data to assign it codes I could work with. I learned through the data request and coding process that my institution, probably like many others, had deviated from its normal data entry procedures during the COVID-19 pandemic.

Time was also an impediment to meeting my self-imposed deadlines. As mentioned above, I took on new responsibilities this calendar year due to my former supervisor's retirement. The added duties, along with the return of in-person meetings, required that I spend most weeknight evening following up on tasks and emails I had neglected during the day. While I tried to take more vacation days during the spring semester, I had to forfeit many scheduled days due to faculty interviews, conference travel, or committee meetings. Like many community colleges, we get Fridays as paid time-off during the summer months. I was intentional about using Fridays and other observed holidays this summer to revise chapter 1, compile chapter 2, and write chapter 3. I am not a fast writer by nature; I have never been a student who could wait until the night before to start a major writing assignment. To ensure progress towards completion of my dissertation, I set word count goals for my writing days. I also met regularly with my dissertation chair, Dr. Hu, to be accountable for reporting the work completed.

### **Application to Professional Practice**

More states are enacting policies to mandate college and universities use multiple measures to place students in college-level coursework (Hodges et al., 2020). Using a high school GPA requires postsecondary institutions to broaden their definition of college readiness beyond one high-stakes standardized exam; however, there was limited research in how or whether colleges and universities are using multiple measures to meet the demands for dual credit students and their families. While the findings from the research study suggest that the standardized placement exam is related to more positive outcomes for students, I cannot recommend that the college revert back to the ACCUPLACER or ACT/SAT score as the only

acceptable placement measure for dual credit students. I agree with Edmunds et al. (2022) that it would be a “huge, missed opportunity” (para. 7) to limit access to dual credit to only those students who performed well on standardized placement exams that have debatable evidence regarding predictability.

However, I do not believe relying solely on the high school GPA is sufficient to evaluate students’ readiness to tackle more advanced thinking, reading, and writing. In the Minority Report to the Senate Joint Resolution 41 Advisory Council for Developmental Education Reform in Illinois (2020), stakeholders voiced their concern for the “single use of multiple measures” (p. 28) that encourages institutions to use the measure that will put the student in the highest possible course level. The writers argued that the multiple measures outlined in the SJR 41 Majority Report encourages the use of just one measure, rather than taking a more holistic view of the students’ readiness by considering the actual multiple measures that demonstrate preparedness. Conley (2007), too, also cautioned against relying solely on high school grade point averages (GPA) to assess college readiness. According to Conley (2007), high school GPAs have experienced considerable inflation and may be problematic because of schools’ inconsistent weighting criteria and formulas. Rather than use of any one measure, Conley (2007) argued that college readiness is a multi-faceted concept that includes key cognitive strategies, key content, academic behaviors, and contextual skills and awareness. As my institution considers extending the use of the high school GPA as a placement measure, I assert that it will be imperative that we avoid a single measure, but rather use a combination of measures which may include standardized placement and college entrance exams, high school GPAs, course-taking patterns, and non-cognitive assessments (Ganga et al., 2018).

Additionally, it will be critical for institutions who permanently adopt the high school GPA as a placement measure to consider the academic and non-academic supports offered to dual credit students to aid in their success. As mentioned in Chapter 2, there are serious concerns among college leaders that the COVID-19 pandemic has led to students having lower levels of academic preparedness and higher levels of mental health and life challenges. These challenges may persist indefinitely. In collaboration with our secondary partners, higher education institutions will need to discuss what support services will be needed, plans for referral and intervention, and methods of communication with the high school students and their champions.

Changes in placement measures require that college leaders participate in assessment practices that include setting benchmarks, examining feedback and student data, discussing possible ways to improve learning, and acting on those results to improve outcomes for students. My experience with this dissertation of practice demonstrated the importance of collaborating with relevant stakeholders to discuss the ways in which we could set goals for a pilot, collect the needed data, analyze the results, and report our findings. My challenges in locating relevant data and having to retroactively enter course authorizations for students who were placed with a high school GPA could have been avoided if I had engaged in meaningful discussions with the Administrative Information Systems office and the Student Success division. Too often, college faculty and staff implement changes or develop initiatives with good intentions; however, when assessment is absent, it is difficult to demonstrate to stakeholders and accreditors how data were used for decision-making and improvement. Because of this experience, I have challenged myself and my colleagues to be more intentional about articulating success measures and data needs. It is through ongoing conversations about assessment, data, and learning that institutions like mine can make effective change that impacts student learning and outcomes.

### **Implications for Future Research**

Should the study be expanded past the COVID-years, it will also be critical to collect more demographic data of dual credit students enrolled. This study revealed that Prairieland Community College does not have a mechanism to collect the socioeconomic status of student taking dual credit. This characteristic would provide another variable by which to conduct analysis and interpretation. Moving forward, the institution should consider ways that they can collect a more expanded list of student characteristics to not only aid in future studies of students' outcomes, but to also assist in providing targeted student supports like financial assistance.

Burke (2021) reported on colleges' and universities' preparation for incoming freshman who recently graduated during or after the pandemic. One community college president is quoted as saying, "We certainly expect – based on experiences in the past year and what we're hearing from our K-12 partners – that students who are taking dual-enrollment classes with us and students coming to us right from high schools are likely to have some academic challenges that may have increased from a normal year (para. 15)." In addition to adding services that will support students throughout their educational experiences, colleges who adopted a temporary placement measure like the high school GPA should consider extending its use in determining eligibility and conducting further study on its relationship with student outcomes. A greater sample size, combined with more normal learning contexts, may lead to different findings.

From an institutional perspective, it is important to know whether the courses students take as dual credit contribute to their success long-term. As seen from the descriptive statistics, students overwhelmingly pass ENGL 101. However, it is unclear whether students develop the



skills, knowledge, and abilities to succeed after their dual credit experience. While studies indicate that dual credit is related to increased rates of college persistence and completion, it is critical to assess the value of the institution's dual credit experience.

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